

BRITISH BIRDS

VOL. IV



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ROSEATE TERN (*adult and young*)

LITTLE TERN (*adult and young*)

BRITISH BIRDS

WRITTEN AND ILLUSTRATED BY
ARCHIBALD THORBURN, F.Z.S.

*WITH ONE HUNDRED AND NINETY-TWO
PLATES IN COLOUR*

IN FOUR VOLUMES
VOL. IV

NEW EDITION

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BRITISH BIRDS

ORDER LIMICOLÆ

FAMILY CHARADRIIDÆ

THE WOODCOCK

Scolopæx rusticula, Linnæus

PLATE 145

This bird is not only well known as a winter visitor and passage migrant, but also as a not uncommon resident species, breeding in suitable coverts and woodlands as well as in the open in many parts of the British Islands. The majority of the birds, however, whose coming is so much looked forward to by sportsmen, reach us from abroad in October and remain till March, when the home-bred pairs have already begun to nest. The Woodcock is found in the breeding season over a great extent of territory in Europe and Asia, from Northern Scandinavia, Russia, and Siberia, to the Pyrenees, Himalayas, and Japan. In winter it finds its way to the countries of the Mediterranean and Africa.

In habits, it is rather a solitary bird, passing most of the daylight hours in repose, resting in the stillness of some favourite coppice or in dry places among heather or oaks on a sheltered hillside. It then seems to be quite aware of the security afforded by the close assimilation of the russet and grey of its plumage to its surroundings, and will sit very close before being flushed, and often the large dark eye is the first thing to attract attention to the presence of the bird.

At dusk it flies swiftly to some favourite feeding ground in marshy places, and probes the moist earth with its long and sensitive bill in search of its food, consisting chiefly of earth-worms.

When flushed, the Woodcock often utters a soft guttural note not unlike the croak of a frog, otherwise it is a silent bird except in spring, and then the males emit a louder and shriller sound in courting, when the birds may be seen "roding," namely, flying to and fro towards evening in open spaces and rides among trees.

The nest is a slight hollow in the mossy ground, lined with a few dead leaves, and generally contains four eggs of a pale yellowish-buff colour, blotched and spotted with shades of reddish-brown and grey. It has long been known that the Woodcock will take up and carry off its young when in danger, but opinions differ as to how exactly the chick is held, for as the mother usually depresses and spreads her tail as she flies directly away from the observer, this serves as a screen, but having seen the act, I believe that the chick is placed between the legs of the parent, clasped by the feet and held close to her body. In the same way the young are often taken to their feeding grounds in the evening. Mr. J. H. Dixon tells me he has frequently seen this happen in Ross-shire, where the old birds would carry their burden across a fairly wide river on summer evenings. Even when the young are fledged and half-grown, the female Woodcock has been known to lift and carry them away.

No one as yet appears to have discovered any means of distinguishing the sexes of the Woodcock by the plumage. Two distinct types of colour occur in the bird, one having the plumage in general of a ruddy tint, the other being much greyer.

Length, $14\frac{1}{2}$ inches ; wing, $7\frac{1}{2}$ inches.



THE GREAT SNIPE

Gallinago major (J. F. Gmelin)

PLATE 146

This large Snipe is one of the birds of passage which visit our islands in Autumn on their way southwards from their breeding grounds in Northern and Central Europe and Siberia, when they sometimes travel as far as South Africa; while on their return journey in spring they only rarely occur in Britain.

The Great Snipe, known also as the Double or Solitary Snipe, is more often seen during the time of migration in the eastern and southern counties of England than in other parts of the country, but it is always rather a scarce bird. Unlike the Common Snipe, it shows no special liking for marshy ground, and is as often as not to be found in dry places, though it frequents swamps during the breeding season. Concerning its rather sluggish habits, Lord Lilford says (*Birds of Northamptonshire*, Vol. II., p. 53): "This Snipe will often run before a dog for some distance before taking wing, and is usually very tame, rising with apparent reluctance, and offering the easiest of shots. If not shot at, the Great Snipe generally flies low for a short distance, rises for a few yards into the air, and pitches straight down to the ground. I never saw one of these birds mount high or indulge in the wild erratic flight so frequent with the Common Snipe. The flesh of the Great Snipe is excellent, and much sought after wherever the bird is known."

According to Professor Collett, this species does not engage in aerial evolutions in the breeding season like our common bird, but has a "drumming place" (Spil-plads), to which a number of pairs resort to "drum" and where the males

fight for possession of the females. The nest is made in a tussock of grass or rushes in the marsh, and contains four eggs, greyish-buff in colour and blotched and spotted with purplish brown and grey.

The Great Snipe may always be distinguished from the Common Snipe, apart from its larger size and comparatively shorter bill, by having normally sixteen (occasionally eighteen) tail feathers instead of the usual fourteen of the other bird. The tail also shows considerably more white on its outer feathers, and the flanks and underparts are much more heavily barred.

The sexes are alike in colour. Length $10\frac{1}{2}$ inches, wing $5\frac{1}{2}$ inches, bill $2\frac{3}{8}$ inches.



COMMON SNIPE

JACK SNIPE

THE COMMON SNIPE

Gallinago cœlestis (Frenzel)

PLATE 147

The Common Snipe is plentiful among bogs and marshlands throughout Great Britain and Ireland, breeding where it can find suitable swamps for the purpose, and having its numbers greatly increased in autumn by migrants from the Continent of Europe, which either come for the winter or pass onwards as birds of passage to softer climates. In Britain it appears to be most abundant in the Western Isles of Scotland and in Ireland.

Abroad, it inhabits the northern and temperate regions of Europe and Asia, migrating from the colder parts in autumn.

The Snipe usually rests during daylight, hidden in some quiet retreat among rushes or other cover, and in the gloaming flies to its favourite feeding grounds, where it can bore with its long and sensitive bill for worms and grubs. MacGillivray has given the following excellent notes on its habits : “ On alighting it stands for a short time, apparently for the purpose of looking around ; then proceeds in search of food with its bill obliquely inclined towards the ground, which it rapidly probes to a variable depth, sometimes inserting the bill to its base. By the peaty or muddy edges of ditches, rills and small water-runs, the marks thus left are frequent. It also wades in the water, keeping itself as high as possible on its legs. In feeding it cannot be properly said to associate with any other bird, although occasionally in summer the Dunlin, and in winter the Water Rail and Jack Snipe may be found in the same place.

“ I have many times watched the Snipe while feeding by unfrozen rills and in oozy ground, when there was snow on

the ground, as well as on ordinary occasions, when, however, it is very difficult to observe it. Proceeding in a crouching manner, it thrusts its bill rapidly into the mud, often up to the base, seems to be groping with it for a moment or two, then rapidly withdraws it, and thus goes on, advancing slowly and making many thrusts in some places, in others moving quickly and making few trials. I have never seen it extract anything to be subsequently swallowed, prehension and deglutition being apparently performed while the bill is immersed."

When startled the Snipe rises suddenly, uttering its double note, usually rendered as *Scape, scape*. The curious bleating or drumming produced by the bird in spring, which has given to it the names of Heather-bleater or Air-goat, is apparently caused by the vibration of the two stiff and peculiarly shaped outer tail-feathers, as the bird swoops swiftly downward while circling in the air at a considerable height. During the descent these two feathers are separated from the others and kept apart, while at the same time a quivering movement of the wings is seen, which may have some connection with the sound produced.

The nest, generally made in April, is well concealed among grass and rushes on the moor or swamp. The four eggs are of a pale greenish-olive tint, with dark blotches of brown.

Owing to the nature of their food, Snipe are among the first birds to suffer during hard frost, when they become listless and tame, frequenting oozy places where springs help to keep the ground soft enough to let them probe for their food.

Length, $10\frac{3}{4}$ inches; wing, 5 inches; bill, $2\frac{5}{8}$ inches.

A large russet variety of the Snipe, the *Gallinago russata* of Gould, known now as the Færoe Snipe, the *Capella gallinago faeroeensis*, of trinomialists, has occurred in various parts of the British Islands. The colour is in general much more of a reddish-tawny tint than that of the common species. There is also a dark sooty form, known as Sabine's Snipe, formerly considered a distinct species, but now known to be only a variety. This phase has seldom been obtained except in the British Islands.

THE JACK SNIPE

Gallinago gallinula, Linnæus

PLATE 147

The Jack Snipe, a small species, solitary in its habits, generally comes to us in September and remains till March or April, though occasionally odd birds may be seen throughout the summer. Reports of its nesting in the British Islands have been made from time to time, but never authenticated with any certainty. Its breeding quarters are the swamps of Northern Europe and Asia, chiefly north of the Arctic Circle, where, in Lapland, its nest was first brought to notice by Wolley in 1853.

In its ways the Jack Snipe differs considerably from its larger relation, though haunting the same kind of ground, such as bogs, rush-covered marshes or wet ditches, and showing a strong liking for certain localities, to which it will return again and again. It usually keeps to its own company, and when flushed seldom flies far before pitching again, and, as a rule, it is a silent bird. Sometimes it will sit so close in cover as to allow itself to be picked up by a dog or even by the human hand. The bird appears to keep in better condition during times of hard frost than the Common Snipe.

Wolley's account of the nesting of the Jack Snipe is given in Hewitson's *Eggs of British Birds* (ed. 3, ii. p. 357), as follows. They were "all alike in structure, made loosely of little pieces of grass and *equisetum* not all woven together, with a few old leaves of the dwarf birch, placed in a dry sedgy or grassy spot close to more open swamp." The four eggs, which are very large for such a small bird, are of a yellowish-olive colour, blotched and spotted with dark brown.

Wolley, alluding to the curious "drumming" made by the bird in the breeding season, likens the sound to "the cantering of a horse in the distance, over a hard hollow road ; it came in fours with a similar cadence, and a like clear but hollow sound." Besides being much smaller, the Jack Snipe differs considerably from the Common Snipe in colour, having a glossy sheen of green and purple on the upper parts and is without the pale buffish streak in the centre of the forehead. The tail of twelve feathers is sharply pointed.

The food consists chiefly of worms and larvæ, but in severe weather vegetable matter is also eaten. (Howard.)

Length, 8 inches ; wing, $4\frac{1}{2}$ inches ; bill, $1\frac{9}{16}$ inches.

THE BROAD-BILLED SANDPIPER

Limicola platyrhyncha (Temminck)

PLATE 148

The Broad-billed Sandpiper is a rare straggler to our shores, about sixteen having been recorded in Great Britain, mostly on the southern and eastern coasts, and only one in Ireland. The majority of the birds were obtained between August and October, but four in April and May.

It breeds on the mountains of Scandinavia, in Northern Russia, and probably in Siberia, migrating in autumn, when it visits most of the European countries, Egypt, Southern Asia, the Philippines, and Madagascar.

Quoting some notes on this species by the late Richard Dann, *Yarrell* (4th ed., Vol. III., p. 365), states: "This Sandpiper is by no means uncommon during the breeding-season in Lulea and Tornea Lapmark, frequenting grassy morasses and swamps in small colonies, generally in the same places as those frequented by the *Totanus glareola*, our Wood-Sandpiper. It breeds also at Fokstuen on the Dovre Fjeld mountains, about three thousand feet above the level of the sea, in Norway, where it arrives at the latter end of May. On its first appearance it is wild and shy, and similar in its habits to the other species of the genus, feeding on the grassy borders of the small pools and lakes in the morasses. On being disturbed it soars to a great height in the air, rising and falling suddenly like the Snipe, uttering the notes *two woo*, which are rapidly repeated. . . . It seems to lay its eggs later than others of this tribe generally. I found the eggs not sat upon on the 24th June, and the last week in July young were unable to fly—a period when all the other Sandpipers are on the move south. The eggs were of

a deep chocolate colour, and its nest, like that of the Snipe, was on a hummocky tuft of grass." The clutch consists of four eggs.

The Broad-billed Sandpiper feeds chiefly on insects and larvæ and sometimes on seeds, and is more partial to fresh-water marshes than to the coast. In winter the general colour of the upper parts of the bird is ashy-grey, when, except for its singularly broad bill, it is not unlike the Dunlin at that season.

A paler form of this species is found in Eastern Siberia.

Length, $6\frac{1}{2}$ inches ; wing, $4\frac{1}{4}$ inches.

THE TEREK SANDPIPER

Terekia cinerea (Güldenstädt)

PLATE 148

Two pairs of this rare species, which had never before been known to visit the British Islands, were obtained on Romney Marsh, Kent, in May, 1912, and three more were recorded from Rye, Sussex, in May, 1915.

According to the *List of British Birds*, published by the British Ornithologist's Union (2nd ed., 1915), "The Terek Sandpiper breeds in North-eastern Europe and North Siberia from the valley of the Onega in Russia, to the valley of the Kolyma, in east Siberia, and probably to the Anadyr Peninsula; on the Yenesei it ranges to 70° N. latitude, southwards it breeds to about 51° N. in the Ural Mountains and Central Asia, but has not been found breeding on the shores of the sea of Okhotsk. In winter it visits the coasts of Africa, ranging south to Damaraland and Natal, Southern Asia, and the Malay Archipelago to Australia."

The bird frequents the courses of rivers and the shores of fresh-water lakes; it takes after the Common Sandpiper in its habits and food, and utters a loud clear call-note.

It lays four eggs in a slight hollow in the ground; greyish-buff in ground-colour, blotched and spotted with brown and purplish-grey.

Length, 9 inches; wing, 5½ inches.

THE AMERICAN PECTORAL SANDPIPER

Tringa maculata, Viellot

PLATE 148

This American species, which visits our shores more often than any other wanderer from the Western World, has been recorded more than fifty times in the British Islands, ten of these having occurred in the Isles of Scilly, which seem to have such a strong attraction for American waders.

The bird breeds in the Arctic regions of North America, and winters in the southern part of the continent, ranging as far as Patagonia. The nest, placed on the ground among grass, contains four eggs, either buffish or pale greenish-brown in ground-colour, blotched with deep warm brown.

The food consists of insects, tiny shell-fish, etc., as well as some vegetable matter. Various authors have referred to the remarkable display of the male in the breeding season, which seems peculiar to this species. Inflating his throat, he utters deep reverberating notes, sometimes delivered in the air, sometimes on the ground. The sexes are alike in plumage.

Length, 8 inches ; wing, $5\frac{1}{4}$ inches.



AMERICAN PECTORAL SANDPIPER
TEREK SANDPIPER

BROAD-BILLED SANDPIPER

THE SIBERIAN PECTORAL SANDPIPER

Tringa acuminata (Horsfield)

An example of this Sandpiper was obtained at Breydon, Norfolk, in August, 1892, and another is said to have been taken near Yarmouth in September, 1848. It breeds in north-eastern Siberia, and migrates southwards in winter, when it visits Japan and China, ranging as far as Australia and New Zealand.

In general the colour of the upper parts in this species is more rufous than in the other, and the tail feathers are more pointed.

Length, 8 inches ; wing, $5\frac{1}{2}$ inches.

BAIRD'S SANDPIPER

Tringa bairdi (Coues)

PLATE 149

Baird's Sandpiper is another rare American visitor to Great Britain. The first was obtained in Sussex in October, 1900, the next in Norfolk in September, 1903, a third on St. Kilda, Outer Hebrides, in September, 1911, while two more were taken in Sussex in 1912 and 1914, both in the month of September. This bird inhabits the Arctic shores of North America in the breeding season, whence it passes in winter to the southern parts of the New World, ranging as far as Argentina and Chile.

In habits it does not appear to differ from others of the same genus, and nests on the ground among grass, laying four eggs, in ground colour varying from greyish to creamy-buff, thickly dotted with deep reddish-brown or chestnut.

In winter the russet in the upper parts of the bird becomes greyer, with dusky central streaks on the feathers.

Length, $7\frac{1}{4}$ inches ; wing, $4\frac{3}{4}$ inches.



BONAPARTE'S SANDPIPER

LITTLE STINT (*immature, autumn*)

BAIRD'S SANDPIPER

BONAPARTE'S SANDPIPER

Tringa fuscicollis, Viellot

PLATE 149

Bonaparte's Sandpiper only occasionally wanders to our shores from America, having been obtained fifteen times in England, and possibly once in Ireland. It breeds far to the north in the Arctic wastes of America, and in winter migrates to the southern parts of the Continent and to the Falkland Islands.

The nest, a slight depression in the ground, with a scanty lining of withered leaves, contains four eggs of a dull rufous or greyish-buff colour, blotched with deep brown.

Dr. E. Coues observed the bird on rocky coasts, and describes its note as a soft, low *weel*, differing from that of other Sandpipers. The food consists chiefly of insects and tiny shell-fish.

In winter the upper parts of the plumage become greyer, with dusky streaks in the centre of the feathers, and the dark marks on the breast are paler.

Length, $7\frac{1}{4}$ inches ; wing, $4\frac{3}{4}$ inches.

THE DUNLIN

Tringa alpina, Linnæus

PLATES 150 AND 151

Frequenting our shores in large numbers during autumn and winter, especially mud-flats and estuaries, this wader breeds regularly in suitable localities in the British Islands, though many leave us in spring for their summer quarters in other lands. It is more numerous in the breeding season on the moors in the northern counties of England than in the south, and nests in some districts in Wales, but is still more plentiful in the wilder parts of Scotland and its islands, where it often may be seen associating with the Golden Plover, hence its name of "Plover's Page." A few pairs breed in Ireland.

In summer the Dunlin inhabits many parts of Northern Europe and Asia, and in winter visits the Mediterranean, as well as Africa and India.

The nest, lined with a few dry bents, is placed in a tussock of grass or in some slight hollow in the ground, and contains four eggs varying in colour from a light greyish-green to a pale brown, blotched and spotted with rich warm brown and purplish-grey shell-markings. The food consists of worms, insects, and small marine creatures.

The striking effect produced by a flock of Dunlin in their ordered masses when in flight, as the birds incline first to one side and then to the other, flashing as their snowy underparts catch the light or melting into the background as they turn, has always afforded delight to lovers of nature and has been alluded to by most of those who have written on the subject.

MacGillivray thus describes their habits: "If it be



CURLEW-SANDPIPER (*summer*)

LITTLE STINT (*summer*)

DUNLIN (*summer*)

pleasant to gaze upon the flocks as they sweep over the water, it is not less so to watch them searching the shores. They are seen moving about in a quiet manner, never interfering with each other, but busily picking up the food which comes in their way, or which they discover by tapping or probing, without, however, thrusting their bills deep into the sand or mud. Frequently, keeping along the edge of the water, they are seen to run out as the wave retires, and retreat as it advances on the beach. In still shallow water they may often be seen wading, and it is observable that their bills are just about the length of their tarsi and the exposed part of the tibia; but they never go beyond their depth or resort to swimming, although when wounded, should one drop into the water, it floats buoyantly, and is capable of advancing. Their ordinary cry when on the wing is a single shrill peep, and when feeding a softer and less loud note. Very frequently they associate with Sanderlings, sometimes with Ring-Plovers; but although while feeding they may often be seen mingling with Curlews, Redshanks, Godwits, or Oyster-Catchers, they separate from these birds when put up, as their mode of flight is different."

Length, $7\frac{1}{2}$ inches; wing, $4\frac{1}{2}$ inches.

THE LITTLE STINT

Tringa minuta, Leisler

PLATES 149 AND 150

The Little Stint visits the British Islands on passage in the autumn and again in spring on its way from and to its breeding grounds in Northern Europe and Western Siberia. In winter it ranges far and wide, when it visits Africa, India, and Ceylon.

The eggs of this little wader were unknown until Midden-dorf found it breeding in Siberia, and Seebohm and Harvie-Brown were the first to discover the nest in Europe, near the Petchora river, in July, 1875. This is only a slight hollow in the ground, with a lining of dead leaves, etc., and contains four eggs, which, except for their smaller size, are indistinguishable from the Dunlin's. When on our shores in autumn, the habits and way of feeding of the Little Stint are much like those of the latter bird, as it runs along the sand by the margin of the water in search of the small marine creatures on which it lives.

In winter the general colour of the upper parts is greyish-brown, with dusky markings caused by the darker centres of the feathers.

Length, 6 inches ; wing, $3\frac{3}{4}$ inches.



KNOT (*winter*)

DUNLIN (*winter*)

CURLEW-SANDPIPER (*immature, autumn*)

THE AMERICAN STINT

Tringa minutilla, Viellot

There are only four recorded visits of this small species to England, two having been obtained in Cornwall—October, 1853, and September, 1890; and the same number in Devonshire—September, 1869, and August, 1892. It breeds in Arctic America, migrating in winter as far south as Chili.

This bird is rather smaller than the Little Stint, and differs only slightly in colour, though, if a series of specimens of the two in summer plumage be compared, the American bird is seen to be generally blacker on the upper parts.

The nest is merely a slight hollow in the ground, scantily lined with dead leaves, and contains four eggs, similar to those of the Little Stint.

Length, $5\frac{1}{4}$ inches; wing, $3\frac{1}{2}$ inches.

TEMMINCK'S STINT

Tringa temmincki, Leisler

PLATE 153

Like the Little Stint, this small bird of passage visits the British Islands in autumn and again in spring, but is much rarer and less regular in its appearances on our shores than its congener. It breeds in Northern Europe and Asia, and moves southwards in winter, when its range extends to Africa and India.

Wolley, referring to Temminck's Stint, as quoted by Hewitson in *Eggs of British Birds* (3rd ed., Vol. II., p. 362), says: "Grassy banks and pastures by the water-side are the kind of places where it takes up its breeding quarters; and it seems to like to be near houses. Nothing could be more interesting and pretty than this little bird in the early part of summer; it is so tame one could often catch it in a net at the end of a stick. At one time it is hovering with its wings raised over its back, or floating about, and it reminds me rather of some insect than any other bird; at another time it will be standing on the top of a stone or stake, or the gable end of a cottage; and whether hovering or standing on its perch, it utters a constant trilling note, of which I can best give an idea by saying that it brought to my recollection the Grass-hopper Warbler, though the resemblance is perhaps slight.

"When its eggs are very near, it sometimes runs about one's feet, and though it cannot but be anxious, it seems as busy as ever, picking gnats and other insects off the grass. . . . The nest is very simple—a few short bits of hay, in a little saucer-shaped hollow, placed amongst thin grass or sedge, generally not far from the water's edge, but sometimes in the middle of a meadow."

The four eggs are of a pale greenish or buffish stone-colour, blotched with shades of brown.

In winter the colour of the upper parts of the bird is a dull greyish brown with dusky streaks.

Length, $5\frac{3}{4}$ inches ; wing, $3\frac{3}{4}$ inches.

THE CURLEW-SANDPIPER

Tringa subarquata (Güldenstädt)

PLATES 150 AND 151

This wader visits our shores on passage in autumn and spring, showing a preference for those of the eastern and southern counties of England and east coast of Scotland. Though seldom seen on the western side of Great Britain, in autumn it is found in favourable localities in Ireland, where it has been known to stay till December. It breeds on the tundras of Northern Siberia, and migrates southward in winter to Africa, Southern Asia and Australia.

The nest of the Curlew-Sandpiper appears to have been unknown to zoologists till Mr. H. L. Popham described one containing four eggs, which he discovered in July, 1897, at the mouth of the river Yenesei in Siberia. This nest was a somewhat deep hollow in the moss, and the eggs, though smaller, were very like those of the Snipe (see *Proceedings of the Zoological Society*, 1897, p. 490).

While with us, this Sandpiper often associates with other small waders, and in its ways and actions is very like the Dunlin, tripping hither and thither and dabbling with its curved bill on the sand and mud in search of food, which does not differ from that of others of its kind.

The deep russet of its summer dress is very striking, but in winter the colour changes to a sober grey, streaked with darker tones. The figure in plate 151 represents the immature bird in autumn.

Length, 8 inches ; wing, $5\frac{1}{8}$ inches.

THE PURPLE SANDPIPER

Tringa striata, Linnæus

PLATE 153

The Purple Sandpiper is a well-known winter visitant to the rocky parts of our coasts, arriving usually in August and remaining till May, a few odd birds lingering throughout the summer. Its nest has never been found in the British Islands, though it possibly may have bred in the Shetlands.

In summer it inhabits the Færoes, Iceland, Northern Europe, Asia, and Arctic America, and leaves the colder parts of its territory in winter, when it reaches the Mediterranean, and in the American continent migrates as far south as Florida.

The four eggs are laid in some hollow in the ground, lined with pieces of moss or dead leaves, and vary in colour from a pale olive-green to buffish-stone, with underlying shell-markings of purplish-grey and blotches of reddish-brown.

The bird is usually very tame and confiding, and when feeding among the tangle on the rocks is easily approached, and can be watched at very close quarters. They show little fear of the breaking waves, and are often splashed with spray. They readily take to the water and are good swimmers. When passing from one group of rocks to a fresh feeding ground they fly swiftly, usually keeping together in a flock. If the feeding ground be covered at high tide, they loiter on the drier places, quietly resting or preening their feathers.

Length, $8\frac{3}{4}$ inches ; wing, 5 inches.

THE KNOT

Tringa canutus, Linnæus

PLATES 151 AND 152

The Knot is a well-known bird of passage, often assembling in vast flocks of thousands of individuals on many parts of the British coasts and tidal estuaries in autumn and also in spring. It breeds in the remote Arctic solitudes of the Old and New Worlds, including Greenland, Grinnel Land, Alaska, Northern Siberia and the New Siberian Islands, ranging very far southwards in winter and occurring at that season in South Africa, India, as well as in Australia, New Zealand, and South America.

Though Col. Feilden and Mr. Chichester Hart found the newly-hatched young of the Knot in Grinnel Land during the Nares expedition to the Arctic regions in the summer of 1876, it is only within comparatively recent years that the eggs of the bird have been obtained. It breeds in rough shaley broken ground on slopes, where the nest is formed in a slight hollow among the stones and lichen, with here and there the little saxifrage, *Saxifraga oppositifolia*, the buds of which form part of the bird's food in summer. In colour the four eggs are greenish-grey, marked with dark spots and blotches and shell-markings of ashy-grey.

When on our shores in autumn and winter, the habits of the bird are similar to those of its congeners ; its favourite feeding grounds are the sands and mudflats left by the receding tide, where it probes with its bill in shallow pools and runnels in search of the small crustaceans and other marine creatures on which it feeds. The Knot's habit of haunting the margin of the waves is supposed to have given



SANDERLING (*summer*)

KNOT (*summer*)

the bird its name, from Canute, but this is more likely to be derived from its call-note, *knut, knut*.

Describing this species at its breeding stations, Col. Feilden states ("Notes from an Arctic Journal," *Zoologist*, 1879, pp. 102, 103), "The Knot has not the power of drumming like the Common Snipe, but, after soaring in mid-air with outspread pinions, they frequently descend to the ground. During this descent the wings were beaten over the back with such rapid motion that a loud whirring noise was produced, which might be heard at some distance. According to my observations, this action was confined to the males and to the period of courtship."

The sexes are alike in colour.

Length, 10 inches ; wing, $6\frac{1}{2}$ inches.

THE SANDERLING

Calidris arenaria, Linnæus

PLATES 152 AND 153

This restless little wader is common on the sandy parts of our shores in autumn, and also visits us again in spring before leaving for its summer quarters in the far north. It breeds in Arctic Siberia and in Greenland, as well as in the circumpolar regions of the New World, migrating southwards in autumn to spend the winter in warmer lands, when it visits the southern parts of Africa, Asia, and America, and also Australia.

The nest is a slight depression in the ground, scantily lined with dry grass or leaves, and contains four eggs, in ground-colour greenish or greenish-buff, spotted with brown and grey shell-markings.

When nesting, Col. Feilden noticed that the birds, like the Knot, fed on the buds of *Saxifraga oppositifolia*, and also on insects. When with us the food consists of small crustaceans and other marine creatures.

Like the Dunlin and other members of the family with which it often associates, the Sanderling may usually be seen feeding close to the water's edge, nimbly running after the receding waves and picking up its prey. It shows a strong liking for stretches of sand, and may easily be recognised, even at a distance, when in its pale silvery winter dress. This species differs from its allies in having no hind-toe.

Length, 8 inches ; wing, about $4\frac{5}{8}$ inches.



SANDERLING (*winter*)

TEMMINCK'S STINT

PURPLE SANDPIPER (*winter*)

THE SEMI-PALMATED SANDPIPER

Tringa pusilla, Linnæus

A specimen of this Sandpiper, a young bird in autumn plumage, was obtained on Romney Marsh, Kent, on September 12th, 1907. In summer it inhabits the Arctic regions of North America southwards to the mouth of the Yukon River on the eastern, and Labrador on the western side of the continent; whilst in winter it migrates as far south as Patagonia.

In appearance it somewhat resembles the Little Stint, and in habits is much like its congeners, its distinguishing mark being the webbing at the base of the front toes.

It is said to breed in grassy marshes near the coast, the four eggs of a yellowish or greenish stone-colour are blotched and spotted with dark brown.

Length, 6 inches; wing, $3\frac{3}{4}$ inches.

THE RUFF

Machetes pugnax, Linnæus

PLATE 154

This well-known species, noted for the remarkable feathered shield which adorns the necks of the males during the nuptial season, was once a common summer visitant to our English fens, but owing to the draining and enclosure of its favourite haunts, and also to the value put upon the eggs by unscrupulous collectors, it is now almost banished from the land except as a bird of passage. In summer the Ruff inhabits localities suited to its marsh-loving habits in various parts of Europe and Western Asia, and in winter visits Africa and Southern Asia.

The plainly coloured female, known as the Reeve, builds her slightly constructed nest on the ground among grass or rushes, and lays four eggs, in colour pale greyish-green, blotched with umber-brown.

The food consists chiefly of various insects, worms, slugs, etc.

In former days, when this polygamous bird was so plentiful in the fens of the eastern counties, the males soon after their arrival in spring betook themselves to their breeding grounds, and, collecting on some piece of ground a little above the level of the marsh, known to the fowlers as a "hill," fought for possession of the Reeves. The actual fighting does not seem to amount to much, as the greater part of their time is spent in posturing in a crouching attitude with the frills fully spread and bills touching the ground.

As the Ruff was held in high estimation for the table, large numbers were regularly netted or taken in snares of horse-hair at the "hills," and after having been fattened in confinement were sold at high prices.



RUFF (four types of male, and female)

The strange variety of pattern and colour in the plumage of the male birds in the breeding season is extraordinary. Professor Newton, in his *Dictionary of Birds*, pp. 799, 800, says: "It has often been said that no one ever saw two Ruffs alike. That is perhaps an over-statement; but, considering the really few colours that the birds exhibit, the variation is something marvellous, so that fifty examples or more may be compared without finding a very close resemblance between any two of them, while the individual variation is increased by the "ear-tufts," which generally differ in colour from the frill, and thus produce a combination of diversity."

Before summer is far advanced, all the many coloured feathers of these decorated shields are shed, when the bird becomes not unlike the Reeve in appearance, though larger.

Length, $12\frac{1}{2}$ inches; wing, $7\frac{1}{4}$ inches.

THE BUFF-BREASTED SANDPIPER

Tringites rufescens (Viellot)

PLATE 155

The Buff-breasted Sandpiper, an American species, seldom visits the British Islands, only about eighteen having been recorded. It breeds in the Arctic regions of North America and Asia, and ranges far southwards in winter to the warmer parts of America, Asia, and Africa. The nest, placed on the ground, and said to be hardly distinguishable from the Golden Plover's, contains four eggs, in colour buffish or pale olive, blotched with deep umber and with shell-markings of purplish-grey.

The food consists chiefly of grasshoppers and other insects. The late H. E. Dresser, in his *Birds of Europe*, says : " We generally met with them in small flocks, of from five or six to a dozen individuals, never near or on the edge of water, though in some cases there were small pools which swarmed with waders ; but they frequented the grassy places, if any such were to be found, or were seen running along in an irregular wavy line on the road or track made by the cotton-teams. . . . Its call-note is low and weak and is repeated several times in succession, either as it trips along or else as it rises to fly away."

The beautiful pencilled markings to be seen on the under surface of the wing in this species serve to distinguish it.

Length, 8 inches ; wing, $5\frac{1}{4}$ inches.



BUFF-BREADED SANDPIPER

RED-BREADED SNIFE
BARTRAM'S SANDPIPER

BARTRAM'S SANDPIPER

Bartramia longicauda (Bechstein)

PLATE 155

This large Sandpiper, characterised by its long legs and tail, and closely resembling the Plovers in its habits, has been recorded about thirteen times in England and Ireland. Its breeding grounds are on the grassy uplands of North America, whence it migrates in winter to the southern parts of the continent.

The four eggs, in colour pale buff, blotched and speckled with reddish-brown and purplish-grey, are laid in a depression in the ground, slightly lined with bents or dead leaves.

The call note of the bird is a long musical whistle, and its food consists chiefly of beetles, grasshoppers, and other insects obtained on the prairies it frequents.

Length, $11\frac{1}{2}$ inches ; wing, $6\frac{1}{4}$ inches.

THE GREY-RUMPED SANDPIPER

Totanus brevipes, Viellot

Two examples of this Sandpiper, male and female, were obtained at Rye Harbour, Sussex, in September, 1914. According to Dresser (*A Manual of Palearctic Birds*, Vol. II., p. 793), the habitat of this species is "Kamchatka, Eastern Siberia, and Japan, migrating south for winter to China, Malay Archipelago, the Papuan Islands, and Australia.

In summer the general colour of the upper parts is ashy-grey, of the lower white, the cheeks and neck are streaked with dark markings, and the breast and flanks barred with greyish-black. In winter the colour is more uniform, the dark markings being then less distinct.

The breeding habits and nest of the bird are unknown.

Length, $6\frac{1}{2}$ inches ; wing, $6\frac{1}{4}$ inches.

THE COMMON SANDPIPER

Totanus hypoleucus (Linnæus)

PLATE 156

This attractive little wader, known also as the Summer-Snipe, is a very common visitor in spring to the British Islands, arriving in April and taking its departure in September. During summer it is found over the whole of Europe and a great part of Asia, while in winter it migrates to Africa, India, and as far south as Tasmania.

The nest is usually placed near the water on the banks of some clear running stream, or often, as in the Highlands of Scotland, among the stones and herbage by the side of a loch. It is merely a slight depression, lined with dry grass, rushes, or similar material, in which the four eggs are laid. These are generally creamy-buff in colour with blotches and spots of purplish-brown and grey.

The food consists of worms, grubs, and various insects. In summer the clear piping note of the Sandpiper may often be heard as the bird runs along the gravelly margins of lakes and streams with dainty steps and a very graceful swinging motion of the tail. On taking flight, it will skim near the surface of the water, gliding at intervals without movement of the wings and again proceeding with steady strokes. There is no difference in the colour of the sexes, but in winter the dark markings on the upper parts are less distinct.

Length, 8 inches ; wing, $4\frac{1}{4}$ inches.

THE SPOTTED SANDPIPER

Totanus macularius (Linnæus)

PLATE 157

This species is the representative of the Common Sandpiper in America, and in its habits appears to be identical with our bird. In its summer dress it differs in having the under parts darkly spotted and the upper more broadly barred, but at all seasons may be distinguished by the continuous brown band across the secondaries, which in the Common Sandpiper is broken by the eighth and ninth being almost white. In winter the general appearance of the two birds is much alike.

The Spotted Sandpiper is a rare visitor to the British Islands, some seven or eight examples having been obtained, the last of these in Sussex in May, 1913.

In summer it inhabits the northern parts of the New World, and migrates in winter to Central and South America. It frequents the neighbourhood of lakes and rivers and nests in a depression in the ground, lined with bents, etc. The four eggs are light buff or cream-colour, blotched and spotted with deep brown and with underlying shell-markings of grey.

Length, 7 inches ; wing, $4\frac{1}{8}$ inches.

THE WOOD-SANDPIPER

Totanus glareola (J. F. Gmelin)

PLATE 156

The Wood-Sandpiper visits England more or less regularly in autumn and in smaller numbers in spring, and though occurring annually on Fair Isle, Shetlands, it is rare on the mainlands of Scotland and Ireland. Usually a bird of passage, it is supposed to have bred more than once in Great Britain, but the only authentic nest known in this country was one obtained by Hancock on Prestwick Car, Northumberland, on June 3rd, 1853.

It breeds in Northern Europe as far south as the Danube and occasionally nests in Spain ; it has also a wide range through Northern Asia in summer, migrating in winter to the Mediterranean, Africa (as far as Cape Colony), India, Ceylon, the Malay Archipelago, and Australia.

The nest, placed on the ground generally in open moorland diversified by bogs and marshy places, is usually little more than a slight hollow in the soil with a scanty lining of bents. The four eggs are pale buff or light olive-green in ground colour, spotted and blotched with deep warm brown.

Although this species will often perch on a post or dead bough of a tree, its name seems inappropriate, as the bird is much less arboreal than its congener the Green Sandpiper, to which it has a good deal of resemblance, yet the birds may always be distinguished not only by the difference in the markings of the tail, but by the axillaries, those in the Green Sandpiper being dark with narrow bars of white, whereas in the present species they are white, with dusky markings.

In the breeding season the bird utters a succession of trilling notes, and performs a courtship display, commencing in the air and continued after settling on its perch on the ground.

Length, $8\frac{1}{2}$ inches ; wing, 5 inches.



GREEN SANDPIPER
COMMON SANDPIPER
WOOD-SANDPIPER

THE GREEN SANDPIPER

Totanus ochropus (Linnæus)

PLATE 156

The Green Sandpiper is fairly common on passage in many parts of the British Islands, where some birds remain during winter and occasionally throughout the summer.

It breeds in the northern and central parts of Europe and Asia, migrating southwards when winter approaches as far as Africa, Southern Asia, the Malay Archipelago, and even to Australia.

The breeding habits of this species are noteworthy, as, like its near relation the Solitary Sandpiper, it nests in trees, sometimes at some considerable height from the ground, and generally in marshy forest country near pools of water. The bird has more than once been suspected of nesting in England, though this has not been proved. The four eggs, in colour a delicate greenish-grey, spotted with purplish-brown, are usually deposited in the abandoned nests of various birds, such as Thrushes, Jays, and Wood-Pigeons, or in the "drey" of a Squirrel. Sometimes the eggs are laid on mossy stumps or even on the ground.

According to Lord Lilford (*Birds of Northamptonshire and Neighbourhood* (Vol. II., p. 80), "The Green Sandpiper is, in my experience, a very wary bird, and a very great nuisance to the Snipe-shooter, as, rising wildly, it darts up into the air with a shrill trisyllabic whistle, which puts all Snipes within hearing on the alert; in common with most of our waders, however, it soon becomes reconciled to captivity, and feeds readily on small worms and chopped meat; it is a good swimmer, but I have never seen one of this species attempt to dive as the Common Sandpiper often

does when wounded and fallen into water and chased by a dog."

On taking flight, the white upper-tail coverts and outer tail feathers are conspicuous and help to identify the bird.

Length, $9\frac{1}{2}$ inches ; wing, $5\frac{1}{2}$ inches.



GREATER YELLOWSHANK

SOLITARY SANDPIPER

SPOTTED SANDPIPER

THE SOLITARY SANDPIPER

Totanus solitarius (Wilson)

PLATE 157

This species has a good deal of resemblance to the Green Sandpiper in appearance and habits, but may be readily recognised by the dark ground-colour of the lower back and tail feathers. A native of America, breeding in the northern parts of the continent in trees growing among swamps and migrating southwards in winter, it has wandered on rare occasions to Great Britain, having been recorded seven times, viz., in Lanarkshire, Scilly Islands, Cornwall, Sussex, and Kent.

The bird owes its name to its more or less unsocial habits, and it was long before any authentic information regarding its nest and eggs was published. According to a communication to *The Ibis* for April, 1905, by the Rev. F. C. R. Jourdain, the eggs were first discovered in North Alberta in 1903 by Mr. Evan Thomson, who was collecting for Mr. Walter Raine of Toronto. The eggs were found in an old nest of the American Robin, *Turdus migratorius*, in a tree, and in the following year some more were obtained by the same collector in the nests of other birds. Four seems to be the usual complement of eggs; these vary in ground-colour from a pale greenish-white to a warmer tint, with spots and blotches of rich dark brown and purplish grey.

Length, $8\frac{1}{4}$ inches; wing, about $5\frac{1}{8}$ inches.

THE GREATER YELLOWSHANK

Totanus melanoleucus (Gmelin)

PLATE 157

The Greater Yellowshank has been recorded twice in the British Islands, the first having been obtained at Tresco Abbey, Isles of Scilly, in September, 1906, and the other at Winchelsea, Sussex, in October, 1915.

This species inhabits the continent of America, breeding in the northern parts and moving south in winter, when it also visits the Bermudas and West Indian Islands.

It frequents the margins of waterpools, marshes, and estuaries, where its loud thrice-repeated alarm note may often be heard. It nests on the ground, but little is known of its breeding habits. The four eggs are greyish or yellowish buff, blotched and spotted with deep brown.

The bird in the plate is a male in winter plumage; in summer the upper parts are more strongly marked with black, while the under parts are whiter.

Length, 14 inches; wing, $7\frac{3}{4}$ inches.

THE YELLOWSHANK

Totanus flavipes (J. F. Gmelin)

This species has occurred about five times in England and once on Fair Isle, Shetlands, the latest having been obtained at Tresco, Isles of Scilly, on September 2nd, 1920.

In the breeding season the Yellowshank inhabits the greater part of North America, where it is a common bird, and in winter ranges southwards to the West Indian Islands and South America as far as Patagonia.

The nest is a slight depression in the ground, either with or without a slight lining of grasses or bents, and contains four eggs, in ground-colour pale cream or pale drab, blotched with deep reddish-brown. The habits of the bird appear to be similar to those of its congeners.

In summer the head and neck are dull white with dark streaks, the upper parts greyish-brown, blotched and marked with black and spotted with white, tail dull grey and white with dusky bars, under parts white, flanks darkly barred. The axillaries, which are also white, are marked with greyish brown. Legs and feet yellow. In winter the plumage is less distinctly barred.

Length, $10\frac{3}{4}$ inches ; wing, $4\frac{3}{8}$ inches.

THE COMMON REDSHANK

Totanus calidris (Linnæus)

PLATE 158

This well-known bird is a common resident in the British Islands, nesting abundantly in many localities and haunting the coast and mudflats of the estuaries in autumn and winter. It breeds throughout Europe from Scandinavia southwards to the countries of the Mediterranean, and eastwards through Asia Minor to Siberia, ranging in winter to Africa, Southern and Eastern Asia, and the Malay Archipelago.

In spring, the Redshank repairs to wet and marshy ground and rushy meadows, where the birds indulge in a kind of nuptial display in flight, with wings depressed and pointing downwards, and uttering all the time melodious cries. If any one approaches their territory at this season, he is sure to be followed by the birds, which then become very clamorous. The nest is generally well concealed in a tussock of coarse grass or rushes among the marshes and rough pastures to which the Redshank is so partial in summer; it contains four eggs, in ground-colour a pale yellowish-olive, blotched and spotted with purplish-brown. The food consists of worms, water-insects, small crustaceans, and other marine creatures, which the bird secures as it probes the bottom of the shallow pools of the sea-shore or marshes. The Redshank is one of the shyest and most wary of our waders, and usually acts as a sentinel to other birds near by, when its clear loud whistle, uttered when rising and often continued as it flies around, serves as a warning signal to its companions.

MacGillivray says: "Its flight is light, rapid, wavering, and as if undecided, and being performed by quick jerks of



SPOTTED REDSHANK (*summer and autumn*)

COMMON REDSHANK

the wings, bears some resemblance to that of a pigeon. Alighting again at a great distance, along the edge of the water, it runs a short way, stands, vibrates its body, utters its cry, and thus continues until its alarm has subsided. It runs with great celerity, and is in every way remarkable for its activity, which becomes almost ludicrous when it is picking up its food on a beach washed by a high surf, its movements being then executed with astonishing rapidity, as it follows the retiring and retreats before the advancing waves."

The bird shown in the plate is in breeding plumage ; in winter the upper parts are of an ashy grey and the under parts lose more or less the dark markings, whilst the neck and breast are only slightly streaked and the legs are of an orange red. Owing to the young bird having yellow legs, it is apt to be mistaken for the Yellowshank.

Length, 11 inches ; wing, $6\frac{1}{4}$ inches.

THE SPOTTED REDSHANK

Totanus fuscus (Linnæus)

PLATE 158

This species, also known as the Dusky Redshank, is rare in the British Islands, only occasionally visiting our shores when passing to and fro between its breeding quarters in Northern Europe and Asia and the warmer regions which it seeks in winter, when it visits Southern Europe, Northern Africa, India, China, and Japan.

The nesting habits of the Spotted Redshank in Finland were first described by Wolley, who found the birds nesting in dry places near the tops of long hills amongst forests, far away from marshes and often, curiously enough, on black ground where the trees had been burnt, which made it difficult to see the bird while sitting on her nest amid these surroundings.

The four eggs are laid in some small depression in the ground—those found by Wolley being bedded with a few needles of the Scotch fir—and in colour vary from a delicate green to a pale brownish tint, blotched and spotted with deep brown and having shell-markings of purplish-grey.

Like the Redshank, this species is very alert and wary, and lives on similar food, though it shows a greater liking for fresh water than the other. When its breeding ground is invaded the bird utters loud cries, but Lord Lilford considered it less noisy on ordinary occasions than our Common Redshank.

The remarkable difference between the dark nuptial plumage and the white and silvery grey of winter is very striking.

Length, 13 inches ; wing, $6\frac{1}{4}$ inches.



GREENSHANK

THE GREENSHANK

Totanus canescens (J. F. Gmelin)

PLATE 159

This species, considerably larger than the Redshank, visits the British Islands in spring and autumn, occasionally staying during winter, especially in Ireland. It breeds on the moorlands and hills in the Highlands and in some of the Western Islands of Scotland, where the bird is found in many localities. It also breeds in Northern Europe and Asia, migrating southwards in winter to Africa, the warmer parts of Asia, the Malay Archipelago, and even to Australia.

The nest is placed on the ground, often on a hillside among moss and heather and usually beside a stone or rock. It is merely a slight hollow lined with pieces of heath, dry bents, etc., and contains four eggs of a pale buff or stone-colour, blotched with pale purplish-grey, and dotted with dark brown.

In April, before nesting operations have begun, the bird may be seen by the banks of rivers, when it is easily identified by its loud musical whistle. It also frequents the coast, seeking its food among shallow pools of brackish water where streams enter the sea. The food consists chiefly of worms, insects, molluscs, tiny fishes, etc.

The bird in the plate is shown in breeding plumage, when it is in general much darker than in winter. Then the upper parts are paler and greyer, when, excepting the greenish colour of the legs and feet, the present species resembles the Greater Yellowshank, both birds having a slight upward tilt in their bills.

Length, 13 inches ; wing, $7\frac{1}{2}$ inches.

THE MARSH-SANDPIPER

Totanus stagnatilis, Bechstein

This species, in appearance much like a diminutive Green-shank, though the legs are proportionately longer and the body more slenderly built, is a rare wanderer to England, where it has been recorded half a dozen times, the first at Tring, Hertfordshire, October, 1887, two at Rye Harbour, Sussex, June, 1909, one on Bodiam Marsh, Sussex, July, 1910, and two on Romney Marsh, Sussex, May, 1915. In summer this Sandpiper inhabits the south-eastern parts of Europe, ranging eastwards to Turkestan and Siberia, while in winter it migrates to Africa, India, Ceylon, the Malay Archipelago, and Australia.

According to Dresser's *Manual of Palæarctic Birds*, Vol. II., p. 788, "It usually breeds near, but occasionally at some distance from water, in grassy places, its nest resembling that of its congeners, and its eggs, four in number, are usually laid in June or July, and are ochreous buff, sometimes with a faint olivaceous tinge, with pale purplish-brown shell-markings and rich dark brown surface spots and blotches.

In summer, the upper parts of the bird are brownish-grey in colour, with darker streaks and markings in the centre of the feathers, the forehead and crown whitish and also darkly streaked. The under parts are white, with dusky spots and streaks. In winter the colour is lighter. The bill is greenish-brown, legs and feet dull olive-green.

Length, $10\frac{1}{2}$ inches ; wing, about $5\frac{1}{4}$ inches.

THE RED-BREASTED SNIPE

Macrorhamphus griseus (J. F. Gmelin)

PLATE 155

This so-called Snipe, which has more affinity to the Sandpipers, occasionally straggles to the British Islands in autumn, some twenty-two occurrences having been recorded. It breeds in high northern latitudes in America, migrating in winter to the central and southern parts of that continent and the West Indian Islands. The nest is placed on the ground among marshes, and contains four eggs, which, according to Seeböhm's *British Birds*, "vary in ground-colour from pale buffish-brown to pale greenish-brown, spotted and blotched with dark reddish-brown, and with well-marked pale greyish-brown underlying spots." This species obtains its food like the Sandpipers, by probing the sand and mud with its long bill.

The specimen in the plate is shown in full summer dress ; in winter the colour of the upper parts in general becomes a dull ashy-grey, whilst during the intermediate stage of plumage in autumn, when the bird visits the British Islands, the colour is more or less brown ; it is, therefore, sometimes known as the Brown Snipe. The bird has only once occurred in summer.

Length, 10 inches ; wing, $5\frac{1}{2}$ inches.

THE BAR-TAILED GODWIT

Limosa lapponica (Linnæus)

PLATES 160 AND 161

This passage migrant visits our shores in some numbers every year in spring and autumn, often frequenting suitable localities throughout the winter, and even at times lingering through the summer months, but it has never been known to nest in the British Islands.

The Bar-tailed Godwit breeds in Northern Europe and in Siberia, where it ranges as far east as the Yenesei, while in winter it migrates to Southern Europe, Africa, and South-western Asia. The nest is merely a slight hollow in the ground, and the four eggs are pale olive-green, with dark markings of brown.

When on our coasts the bird often associates with other waders, and may often be seen on the wet sands and mud-flats of estuaries and other parts of the shore searching the pools and probing the soft ground with its long slightly upcurved bill in quest of the worms, insects, and small marine creatures on which it lives.

The double call-note is loud and shrill. According to Stephenson, the Bar-tailed Godwit arrives so punctually on the coast of Norfolk about the 12th of May that the day is known to gunners as "Godwit day."

The birds are then usually in their beautiful russet summer dress, which changes in winter to brown and grey.

The female, though less brightly coloured, is considerably larger than the male.

Length of male, $15\frac{1}{2}$ inches ; wing, 8 inches.



BLACK-TAILED GODWIT (*summer*)

BAR-TAILED GODWIT (*summer*)



BLACK-TAILED GODWIT (*winter*)

BAR-TAILED GODWIT (*winter*)

THE BLACK-TAILED GODWIT

Limosa belgica (J. F. Gmelin)

PLATES 160 AND 161

The Black-tailed Godwit, unlike the preceding species, used formerly to breed regularly in the fens of our eastern counties, the last eggs having been taken in Norfolk about 1847. A few birds still visit our country on passage, when they are more often seen on the eastern and southern shores than elsewhere in England, while they only occasionally occur in Scotland, in the Hebrides, Orkneys, and Shetlands, though often visiting Ireland in autumn.

It breeds among the marshes of Holland and in various other parts of Central and Northern Europe, in Iceland, the Færoes, Siberia, and Turkestan, migrating southwards in winter to Southern Europe, Africa, and Southern Asia.

The four eggs are laid on a foundation of dead herbage in a hollow on the ground, generally amongst tall grass, and are in colour pale dull green, blotched and spotted with olive-brown.

The birds are very noisy on their breeding territory being invaded, when they fly round the intruder, uttering loud cries, hence their local name of "barker" or "Yarwhelp," mentioned by Sir Thomas Browne of Norwich, who also alludes to the reputation this bird had as "the dayntiest dish in England." This, together with the depredations of the egg collector, accounts for its disappearance as a breeding species in England.

Both species of Godwit are tall and elegant birds, but the Black-tailed is the larger of the two and has longer legs. Its bill is straighter than that of the other, with only a very slight uptilt.

The male is brighter in colour than the female, but she is the larger bird.

Length, 16 inches ; wing, 8 inches.

THE COMMON CURLEW

Numenius arquata (Linnæus)

PLATE 162

The Curlew breeds abundantly on the elevated moorlands over a considerable part of the British Islands, but it is much scarcer in summer in the southern and south-western counties of England than further north. Early in autumn the birds which have nested inland repair to the sea-shore with their families, where they pass the winter along with flocks of their own kind from the continent of Europe. However, some of the birds seen at this time are only passage migrants which look in on their way south to warmer climates. Most of these migratory movements take place at night, when the cries of the birds may be heard high up as they pass overhead.

In summer the Curlew is widely distributed over Northern and Central Europe and Northern Asia, going as far south in winter as the Mediterranean area, Africa, Southern Asia and Japan.

It is at all times a very shy and wary bird, especially during the time spent on the sands and mudflats of the estuaries, where it is almost unapproachable. On the moors it feeds on earthworms, snails, grubs, and various insects, as well as berries, while on the shore it probes with its long curved bill for sand-worms, crustaceans, and other marine creatures. When moving to their feeding places they fly with slow and regular wing-beats, and gather in companies on the ooze both by day and by night, their meal-times depending on the state of the tide.

The nest is merely a depression in the ground with a lining of bents, and may usually be found among heather or rough

tussocks of grass on hillsides. The four eggs, very large in size, are pale brownish-green in colour, blotched and spotted with dark brown. In the early stages of its life the young bird has a short and straight bill, very different in character from that of the adult.

Beside the normal call-note from which the Curlew gets its name, the birds in the breeding season warble a beautiful kind of song delivered during flight, with exceedingly soft modulations and murmurings of sound, very pleasing to the ear in the days of early spring.

Length, 25 inches ; wing, $12\frac{1}{2}$ inches.

THE WHIMBREL

Numenius phaeopus (Linnæus)

PLATE 162

The Whimbrel is a very regular visitor to the British Islands on passage in spring and autumn, while a few stay throughout the winter on our coasts. It breeds in the Orkneys and Shetlands, and according to the B.O.U. *List of British Birds* (2nd ed., 1915), it has nested in St. Kilda and apparently on North Rona, though never known to nest on the mainland of Great Britain nor Ireland. It inhabits Northern Europe and Asia in the breeding season, and migrates southwards for the winter to Africa, India, and the Malay Peninsula. The Whimbrel is known by various local names to the gunners on the coast, among others "May-bird," on account of the numbers seen during that month, when the bulk of these migrants appears, and "Half-Curlew," in allusion to its resemblance to the larger species. In its habits it does not appear to differ much from the Curlew, but Miss Frances Pitt noticed (*Field*, July 9th, 1925), when visiting the Whimbrel's breeding ground in Norway, that the birds often perched on the topmost boughs of firs and birches in order to keep a good look-out.

The nest is a hollow in the ground amongst grass or heather and is lined with bents. The four eggs are dull olive-green, marked with umber-brown.

The voice of the Whimbrel is very distinct, the birds having, according to Lord Lilford, acquired the local name of "Seven-whistlers" owing to their peculiar cry of seven distinct notes.

I have noticed when the birds are on their way northwards to breed that they like to rest on grassy places near the shore, where they can also find a plentiful supply of food.

Length, $17\frac{1}{2}$ inches ; wing, 10 inches.



COMMON CURLEW

WHIMBREL

THE ESKIMO CURLEW

Numenius borealis (J. R. Forster)

The Eskimo Curlew, an American species, and now supposed to be almost extinct, has been obtained about eight times in our islands, the first in Kincardineshire in September, 1855, and the last on Tresco, Isles of Scilly, in September, 1887.

It used to breed in Arctic America, whence it migrated in autumn to spend the winter in South America. According to Audubon, it was abundant in Labrador in summer and early autumn, when large flocks gathered to feed on the fruit of the crowberry and were ruthlessly shot by gunners.

The nest, a slight hollow in the ground, contains four eggs, in ground-colour pale greenish or dull olive-green, blotched with various shades of brown.

The bird is much smaller than our Common Curlew and has a proportionately shorter bill. In colour the upper parts are dull brown, marked with pale buff, the wing-coverts edged with greyish-brown. The cheeks and neck are streaked with brown, the under parts with dark arrow-head markings on a pale buff ground.

The under tail coverts are buff with dark bars; the tail is also barred.

The bill is blackish-brown, the legs and feet slate-colour. Length, 14 inches; wing, $8\frac{1}{4}$ inches.

THE SLENDER-BILLED CURLEW

Numenius tenuirostris, Vieillot

Three examples of this rare Curlew were obtained on Romney Marsh, Kent, in September, 1910, and a fourth in September, 1914, also in Kent. It breeds in Western Siberia, and in winter visits Southern Europe and North Africa.

Dresser, in his *Eggs of the Birds of Europe*, has given the following notes on the breeding habits of the Slender-billed Curlew, received from Mr. Buturlin: "The present species inhabits fenlands, either such as are open or such as are covered with birch-trees, or sometimes marshes adjoining the pine forests. Its nest is placed on a large hillock, or on a small dry island, often on one ten to fifteen yards square. Mr. Ushakov always found it nesting in single pairs, and often side by side with *Numenius arquata*, but he was informed by local sportsmen that it also breeds in colonies of several dozen pairs. . . . The nest is a mere depression in the ground, not more than an inch deep, scantily lined with dry grass, or sometimes with a low border of dry grass, in which case the nest takes the form of a somewhat deep cup.

"The full clutch of four eggs may be found from the 30th of May to the 10th of June, and the young are hatched about the end of June, but the birds remain for some time at their nesting place, then undertake short wanderings till about the middle of August, and finally leave for the south in the latter half of that month." The eggs "vary in ground-colour from greyish-olivaceous to ochreous-brown, or occasionally reddish-brown, but always with a greenish tinge, and are marked with ashy-grey or pale olivaceous

underlying shell-spots and greyish-brown and dark olivaceous surface-dots, spots, lines, streaks, and irregular blotches.”

This species resembles our Curlew in its general colour, but may be distinguished by the distinct spade-shaped dark markings on the flanks. It is also smaller and has a shorter and more slender bill.

Length, 17 inches ; wing, barely 10 inches.

ORDER GAVIÆ

FAMILY LARIDÆ. SUBFAMILY STERNINÆ

THE BLACK TERN

Hydrochelidon nigra (Linnæus)

PLATE 163

Owing to the extensive drainage of the fens and marshes in our eastern counties or from some other unknown reason, the Black Tern, or "Blue Darr" as it was called in Norfolk, has long ceased to nest in England, where it was once a common summer visitant, and now only comes to its old haunts in comparatively small numbers in spring and autumn as a passage migrant, the last record of its breeding in Norfolk having been in 1858, according to Stevenson. It only occasionally visits Scotland and Ireland.

The Black Tern breeds in many parts of Europe, but apparently not beyond 60° N. latitude, whilst it ranges as far east as Siberia and Turkestan, and in winter migrates to Africa. It is entirely a fresh-water species, frequenting reedy lakes and marshes, where it feeds on various winged insects and their larvæ, including dragon-flies; these are mostly caught on the wing or picked up from the surface of the water, as, unlike most of the Terns, this species seldom strikes the water or submerges. Besides insects it also eats tadpoles, leeches, small fishes, etc.

The nest, built of dead reeds and other plants, and often placed on floating masses of sedge or reeds, usually contains three eggs, in ground-colour dull buff or olive, blotched and spotted with dark brown and purplish-grey. The birds, which breed in colonies, are very noisy when disturbed, their notes being loud and shrill.



WHITE-WINGED BLACK TERN (*adult and young*)

BLACK TERN

There is little difference in the colour of the sexes, but in summer the female has usually the chin, throat and under parts paler. In winter both sexes have the forehead, sides of the face, throat, and nape white, also the under parts the same colour but usually marked and barred with grey.

Length, about $9\frac{1}{2}$ inches ; wing, $8\frac{1}{2}$ inches.

THE WHITE-WINGED BLACK TERN

Hydrochelidon leucoptera (Schinz)

PLATE 163

Though never known to have bred in our islands, this species occasionally visits England and Ireland, sometimes in small parties, in spring and autumn when on passage. It nests among the marshes of Central and Southern Europe, and in Asia ranges as far east as China and south to Turkistan. In winter it migrates to Africa, Southern Asia, and as far south as Australia and New Zealand. Like the Black Tern it is a fresh-water species and breeds in colonies, the nest and eggs resembling those of its congener; nor does it differ much in food or habits, though Lord Lilford considered its flight as somewhat less wavering and indirect than that of the Black Tern. In winter plumage, the head, neck and under parts become white, showing some dark markings on the nape. The mantle and tail are grey.

Length, $9\frac{1}{2}$ inches; wing, $8\frac{1}{4}$ inches.



WHISKERED TERN

BLACK-HEADED GULL (*summer*)

THE WHISKERED TERN

Hydrochelidon hybrida (Pallas)

PLATE 164

This southern species of Marsh-Tern is a very rare visitant to England, where about fourteen have been recorded at different times, while one has occurred in Scotland and one in Ireland. It breeds in the marshes and shallow lagoons in Spain and in other suitable localities in Central, Southern, and South-eastern Europe, also in North Africa, and in many parts of Asia, including India. It migrates in winter as far as South Africa, when it also visits Southern Asia, the Malay Archipelago, and Australia.

The nest, generally consisting of a heap of water-plants collected on the surface of the water, contains three eggs, varying in ground-colour, but generally of a delicate green, blotched and spotted with blackish-brown. The bird does not differ from the Black Tern in habits, but according to Lord Lilford, its note is "somewhat harsher and more prolonged than that of the other."

These three different species of Marsh-Tern have the webbing of the toes much more indented or cut out than our other Terns.

Length, 11 inches ; wing, $9\frac{1}{2}$ inches.

THE GULL-BILLED TERN

Sterna anglica (Montagu)

PLATE 165

The Gull-billed Tern, a rare visitor to Great Britain, where about twenty-eight examples have been recorded, from as far north as the Orkneys southwards to the Scilly Islands, was first described by Col. Montagu in the Supplement to his *Ornithological Dictionary* in 1813 from birds obtained in Sussex and Kent. It breeds in small numbers on the Danish coasts and islands, and also in Spain and other parts of Southern and Western Europe, in Asia, North Africa, and the shores of North America, whilst in winter it is found throughout Africa, in favourable localities in Southern Asia, and in South America.

The nest consists of a small scratching in the sand, with a slight lining of bents, etc., and contains two or sometimes three eggs, in ground-colour light buff, stone-colour, or pale olive, with spots and blotches of various shades of brown.

According to "Yarrell" (4th ed., Vol. III., p. 534), "In its partiality for lagoons, tidal rivers, and inland lakes of fresh or brackish water, and in its comparatively short, although distinctly forked tail, and moderately-webbed feet, this species forms a natural link between the Marsh Terns and those which frequent the sea-coast."

The food consists of various insects, including locusts, grasshoppers, and beetles, often taken on the wing, and according to Col. Irby green frogs are also eaten.

Length, $15\frac{1}{2}$ inches ; wing, $12\frac{1}{2}$ inches.



LITTLE GULL (*adult and young*)

GULL-BILLED TERN

THE CASPIAN TERN

Sterna caspia, Pallas

PLATE 170

This large Tern is a rare straggler to the English coasts, mostly those of the eastern and southern counties, where some twenty-three examples have been taken and others seen. In Europe it breeds from as far north as the Gulf of Bothnia, southwards to the Mediterranean, and eastwards to the Caspian Sea, also throughout a great part of Asia, Africa, Australia, New Zealand, and America. The birds which breed in the colder parts of their range move southwards in winter. The nest is only a small depression in the sand, with a slight lining of bents or sea-weed, and contains from two to three eggs, in ground-colour pale buff or greyish-brown, spotted and marked with purplish-grey and brown.

The food, consisting almost entirely of fish, is obtained by a sudden and headlong plunge into the sea after the bird has located its prey from above. The cry of the bird, like that of all the Terns, is harsh and strident. In winter the black on the head of the bird is streaked with white.

Length, 20 inches ; wing, 16½ inches.

THE SANDWICH TERN

Sterna cantiaca, J. F. Gmelin

PLATE 166

This species, first recognised near Sandwich in 1784, is a regular summer visitor to the British Islands, breeding in large colonies on the eastern and western coasts of Great Britain and on some of the Irish loughs. In Europe the Sandwich Tern nests on the coasts of Denmark, the Netherlands, and in some parts of the Mediterranean, ranging eastwards to the Caspian Sea, while in winter its migrations extend over a great part of Africa and South-western Asia. It also inhabits America.

The nest is a slight hollow scraped in the sand, and contains two or occasionally three eggs, varying in ground-colour between a pale yellowish-white and buffish stone-colour, spotted and marked with dark brown and pale grey.

In habits the bird is much like the other salt-water Terns, but may be distinguished from our other breeding species by its large size and bold easy style of flight. When near at hand, the crested plumes on the nape, the shorter and less deeply forked tail, black yellow-tipped bill, and black legs and feet make it easy to recognise. As with the other species of this family, the male has the characteristic habit of offering the female a fish for her acceptance during courtship. The food, consisting chiefly of sand-eels and other small fishes, is sought for by hovering above the water and then secured by a sudden downward stoop.

The cry is harsh and grating, and is especially noticeable when the breeding territory is invaded.

Length, 16 inches ; wing, 12 inches.

THE ROSEATE TERN

Sterna dougalli, Montagu

PLATE 168 (*Frontispiece*)

This extremely graceful and delicately coloured species, now well known as a summer resident, was first noticed by Dr. MacDougal of Glasgow, on the Cumbraes, Firth of Clyde, over a hundred years ago, when it seems to have been more numerous than at the present time. The number of breeding birds appears to vary from year to year, as the birds are much harried by egg collectors, and are sometimes crowded out of suitable breeding stations by other species of Terns.

Colonies are still to be found on the English and Welsh coasts, including the Farne Islands, and also in Ireland. In Scotland it is rare.

During summer it is found locally in some parts of Europe, but not apparently beyond 57° north latitude. It frequents the coasts of Africa, Asia, Australia, and America, being migratory in the colder parts of its habitat.

The nest is usually a slight hollow on rocks or among shingle, with hardly any lining, and contains one or two eggs resembling those of the Common Tern. In habits the two species are much alike. The Roseate Tern may be distinguished by its more elegant form and longer tail, the roseate tints on the breast, and by the larger amount of black on the bill.

Length, 15½ inches ; wing, 9¼ inches.

THE COMMON TERN

Sterna fluviatilis, Naumann

PLATE 166

The Common Tern, a summer visitant to the British Islands, breeds abundantly on many parts of our coasts and sometimes on the shores of inland lakes, but is less numerous towards the north of Scotland, where the Arctic Tern predominates. It breeds in favourable localities throughout Europe, from as far north as Norway, also in many parts of temperate Asia, in North Africa and North America, and in winter moves southwards to warmer climates. The nest consists of a hollow in the sand or shingle, or sometimes a depression among rocks, with a lining of bents, etc., and is often situated on some low-lying island off the shore; it usually contains three eggs, in colour greyish-buff or pale olive, with blotches of brown and purplish-grey.

The Sea-swallow, as the bird is sometimes called, is usually seen in colonies, flitting to and fro over the sea or shallows on sandy shores with an unsteady wavering flight, sometimes hovering and then making a sudden plunge into the water after the small fishes, etc., which form its prey.

In some of the older birds the point of the bill may be seen to be worn and shortened by the constant friction, apparently by the sand.

Owing to the objection made by fishermen to the protection of Terns on account of their supposed destruction of the young of flat fish, a careful examination of the contents of the stomachs of a large number of Terns of various species by Dr. W. E. Collinge was carried out recently, and it was found that there was a total absence of any remains of flat fish in every specimen examined. The food consists of the



SANDWICH TERN (*adult and young*)

COMMON TERN

young of whiting, haddock and other fishes, sand-eels, marine worms, crustacea, etc., and also of insects. (See *Transactions of the Norfolk and Norwich Naturalists' Society*, Vol. XII., Part I.)

When at rest the birds are fond of basking in the sun on some sloping bed of shingle near the water, and lying with their breasts touching the warm stones.

In early autumn, on stretches of sand and shingle by the sea, large flocks of Terns of various species may be seen before starting on their journey south ; in these companies are many young birds, some still being fed by their parents as they perch on the tops of posts supporting salmon nets, or while waiting on the beach. On such occasions it is hardly possible to distinguish the Common from the Arctic Tern, so much are they alike, but the larger and whiter breasted Sandwich Terns are always easily made out.

Length, $14\frac{1}{4}$ inches ; wing, $10\frac{1}{2}$ inches.

THE ARCTIC TERN

Sterna macrura, Naumann

PLATE 167

Although colonies of the Arctic and Common Terns are found nesting in the same territory on some parts of our coasts, yet the breeding range of the first mentioned species is in general more to the north and extends far beyond our shores to the unexplored lands of the Arctic Ocean in both hemispheres, whence the birds migrate in winter to the southern parts of Africa, Asia, and America.

In England there are a few well-known breeding stations, including the Farne Islands, Walney Island, Lancashire, Isle of Man, Scilly Islands, and some islands off the Welsh coast, but in Scotland it is a common nesting species on the shores of the mainland as well as on the islands. It is also numerous in Ireland.

The nest is a mere hollow in the sand or shingle, or, when on rocky islands, a slight depression in the rock with hardly any lining.

The eggs scarcely differ from those of the Common Tern in colour, though they are slightly smaller.

The habits of the two birds are much alike, and in fact they are difficult to distinguish except when closely examined. MacGillivray gives as easily observed characteristics of the Arctic Tern, "the bluish colour of the lower parts, the much shorter tarsus, the greater extent of tail beyond the wings, and the uniform deep red tint of the bill, though the tip is sometimes more or less dusky." Howard Saunders, in his *Manual of British Birds*, has shown that there is a difference in the width and colour of the dark line extending along the shaft on the inner webs of the primaries; this line is wider and darker in the Common Tern.

Length, $14\frac{1}{2}$ inches; wing, 10 inches.



ARCTIC TERN (*adult and young*)

BONAPARTE'S GULL

THE LITTLE TERN

Sterna minuta, Linnæus

PLATE 168 (*Frontispiece*)

This beautiful little bird visits its breeding places in the British Islands every summer, arriving at the end of April or early in May and departing south in autumn. In Europe it breeds as far north as the Baltic and south to the Mediterranean, also in North Africa, and eastwards in Asia to Northern India; whilst in winter it ranges to Cape Colony and as far south as Java.

The two or three eggs, laid on the sand or shingle, often on a collection of small pebbles, are yellowish-grey in colour, blotched and spotted with dark brown and purplish-grey. At pairing time the male, like other Terns, offers food to his mate, and she is also fed by him when on the nest. At this season the birds are very tame and fearless and allow a close approach. The food consists of small fishes.

MacGillivray thus describes its habits: "You may see a pair coming up from a distance, flying at the height of a few yards over the waves, their long wings winnowing the air, and impelling them in starts as it were, as they wend their way in undulating and wavering movements. Suddenly their flight is arrested over a large pool left on the sands by the retiring tide; with quick beats of their wings they hover stationary or but slightly shifting place, and with downward-pointed bill seem intent on something which they perceive in the water. One drops, but not like a stone, dips, but with upraised wings, and rises with a small fish in its bill. The other is similarly successful. Onward they proceed, now and then emitting a shrill cry, and with gentle beats of their wings."

Length, $9\frac{1}{2}$ inches; wing, $6\frac{3}{4}$ inches.

THE SOOTY TERN

Sterna fuliginosa, J. F. Gmelin

The Sooty Tern, which only rarely visits England, has occurred nine times, the first recorded in Staffordshire in October, 1852. It inhabits the tropical seas throughout the greater part of the world, and breeds in very large colonies in various islands, notably Ascension. The nest, scraped out in the sand or shingle or sometimes a slight hollow among rocks, usually contains only one egg, in ground colour white or creamy-buff, blotched or spotted with deep chestnut-red and ash-grey.

In colour, the bird has the crown of head, nape, and a band through the eye to the bill black, the upper parts brownish-black, the rest of the plumage white. The tail has a white edge on the outer feathers. The bill, legs and feet are black, the eye dark brown.

Length, 17 inches ; wing, $11\frac{3}{4}$ inches.

The Lesser Sooty Tern, *S. anæsthesia*, of Scopoli, and the Noddy Tern, *Anous stolidus* (Linnæus), are said to have occurred in British waters, but the records are not now considered satisfactory.



SABINE'S GULL

WEDGE-TAILED GULL

SABINE'S GULL

Xema sabinii (Joseph Sabine)

PLATE 169

This rare Arctic species occasionally wanders to the British Islands, chiefly to the shores of the eastern counties of England, most of those recorded having been immature birds. A few adults in summer plumage showing the dark slaty head and black collar have been obtained from time to time, the example from which the drawing in the plate was taken having been shot near the Wolf Rock Lighthouse, off Land's End, Cornwall, in September, 1894.

Sabine's Gull breeds in the high northern latitudes of both the Old and New Worlds, including Siberia, Spitzbergen, Greenland and Alaska. It was first discovered by Captain Sabine, from whom it takes its name. He found the birds, which showed great boldness in defence of their young, breeding on low rocky islands in company with the Arctic Tern. The eggs, placed on the bare ground, are two in number, and in colour are dull brown or olive, with indistinct blotches of darker brown. The food consists of various insects, fish, and crustaceans.

In winter the ear-coverts and nape retain the dark colour, but the rest of the head is then white. Immature birds have the upper parts dull brownish-grey, with lighter edges to the feathers, while the tail has a dark subterminal band.

In this species the tail is distinctly forked.

Length, 13 inches ; wing, $10\frac{3}{4}$ inches.

THE WEDGE-TAILED GULL

Rhodostethia rosea, MacGillivray

PLATE 169

A specimen of this small and very beautiful species, known also as Ross's Gull, is said to have been obtained near Tadcaster, Yorkshire, in December, 1846, or February, 1847. It inhabits the seas of the Polar regions, and nothing appears to have been known of its breeding habits until Mr. S. A. Buturlin discovered the birds nesting in colonies of from two or three to ten or fifteen pairs, in company with Terns—apparently the Arctic Tern—on the Kolymá Delta, in North-eastern Siberia, during the summer of 1905. A full and interesting account of the Gulls and their nests has been given by this explorer in a paper in *The Ibis* of January, 1906, pp. 131-139, from which I have taken the following notes :

“This vast area, at least 15,000 square kilometres in extent, consists of a liberal admixture of lakes, lagoons, channels, rivulets ('viska'), swamps, moors, and damp ground of every description, with dry places only at intervals. . . . On the morning of May 31st one of my men saw a pair, and during the day I went on the river—where the fathom-thick ice was still quite safe—and came across several dozens. The sun was shining brightly, and in the distance each pair appeared like so many roseate points on the bluish ice of the great stream. I say 'pair,' as from their first arrival the birds were constantly seen in pairs. They had evidently just finished their migration, and were tired after their exertions ; for they sat very quietly on the ice, and though all attempts to stalk them were unavailing, they would not fly far, but only shifted from place to place with

a lazy and somewhat uneasy motion of their wings, which made me jot down in my note-book on the spur of the moment that the flight was more Fulmar-like than Gull-like.

“Several hours later they had evidently recovered from their fatigues, and then I saw that their flight, far from being Fulmar-like, was really much more Tern-like.”

The call was “high and more melodious than that of Gulls in general, and very variable.”

Some nests were placed “on little mossy swamps almost bare of grass,” others “on wet grassy spots or bogs much nearer to the water, and these nests rose from four to ten inches—generally from five to eight inches—above the surface.” The nest is “composed of dry grass and *Carices*, sometimes with the addition of a few dry *Betula* or *Salix* leaves, while I once saw one made of white reindeer-moss.” The two, or more usually three, eggs are “of a beautiful rich olive-green, without any of the greyish or sandy shade so common in eggs of *Sterna* and other members of the Order. They are spotted especially near the larger end with chocolate brown (not earthy-brown).”

The Wedge-tailed Gull, in immature plumage, has the crown and nape tinged with grey, the wings more or less marked with dull blackish-brown and buff, and the tail with a dark terminal band.

In adult plumage, the male is more brightly coloured than the female.

Length, $13\frac{1}{2}$ inches ; wing, $10\frac{1}{4}$ inches.

BONAPARTE'S GULL

Larus philadelphia (Ord)

PLATE 167

This species was first recorded in the British Islands in February, 1848, when a specimen was killed near Belfast ; another was shot on Loch Lomond in April, 1850 ; while some four or five have since been recorded in England, the last of these in Sussex in 1913.

Bonaparte's Gull breeds in the Arctic regions of America from Alaska to British Columbia and migrates south in winter to the warmer parts of the continent. Like our Black-headed Gull, it associates in colonies on fresh-water marshes in the breeding season, but usually builds its nest, composed of twigs, moss, etc., on bushes or on spruce firs. The eggs, generally three in number, are pale olive-brown, spotted and blotched with blackish-brown.

In winter the bird loses its dark hood.

Length, 14 inches ; wing, $10\frac{3}{4}$ inches.

THE LITTLE GULL

Larus minutus, Pallas

PLATE 165

The Little Gull not infrequently visits our eastern and southern coasts from autumn to spring occasionally in some numbers, though not often recorded in summer. It breeds in Northern Europe, and ranges eastwards through Northern Asia to the Sea of Okhotsk, in winter wandering southwards, when it reaches the Mediterranean, North Africa and sometimes the United States of America.

The nest is placed on wet masses of floating water-weeds, etc., among inland marshes, and contains three or sometimes four eggs, in ground-colour greenish or buffish-brown, spotted with dark brown.

This diminutive species, smaller than any other Gull, does not appear to differ from its congeners in its habits. In winter the head is white with some dusky markings on the nape.

Length, 11 inches ; wing, $8\frac{3}{4}$ inches.

THE BLACK-HEADED GULL

Larus ridibundus, Linnæus

PLATES 164 AND 171

This bird is very common and seems to be on the increase throughout the British Islands, in summer breeding in large colonies on the margins of inland lakes and swamps, and in winter haunting the sea-shore, estuaries, and rivers. Most of the Gulls which come up the Thames to London in the latter season appear to be of this species, though then not often seen with their dark heads, and become very tame and fearless owing to the food and protection they receive. The nest, a collection of withered flags and rushes, is built on the ground among marsh vegetation, and usually contains three eggs, olive green, pale brown, or occasionally bluish in colour, blotched with deep brown.

The loud harsh cry of the bird, which never ceases when their nesting ground is invaded, has given it the name of Laughing Gull.

Its food is various, consisting of worms, larvæ, and insects obtained in the fields, when it often follows the plough, or of small fish, crustaceans, etc., from the rivers and the sea-shore.

Length, 16 inches ; wing, 12 inches.

THE MEDITERRANEAN BLACK-HEADED GULL

Larus melanocephalus, Natterer

This species, easily distinguished from the Common Black-headed Gull in summer plumage by its jet-black head—which in our bird is not really black but a sooty-brown—only rarely visits the British Islands, where in England about nine examples have been recorded at different times. It inhabits the Mediterranean, especially to the east of Italy, and also the Black Sea, while westwards it occurs along the coast of Spain as far as South-western France.

According to Lord Lilford's *Coloured Figures of the Birds of the British Islands*, "the present species nests in small numbers on the western coast of European Turkey and on some of the coast-marshes of the Black Sea. In habits this Black-headed Gull does not appear to differ materially from *Larus ridibundus*, but its cry is much harsher and deeper-toned than that of the latter bird, from which it is to be easily distinguished at all seasons by the greater thickness of its bill and generally more robust form."

The two or three eggs are laid in a nest made of seaweed and grasses, and in ground-colour are dull white or pale drab, with streaks and blotches of deep brown.

In winter the head and neck are mostly white with dark streaks of grey. In the immature bird the upper parts are mottled with brown and grey.

Length, $15\frac{1}{2}$ inches ; wing, $11\frac{3}{4}$ inches.



COMMON GULL (*adult and young*)

BLACK-HEADED GULL (*winter*)

THE COMMON GULL

Larus canus, Linnæus

PLATE 171

The so-called Common Gull is only plentiful in England during winter, though immature birds remain throughout the summer. In recent years a pair has nested on the Farne Islands, Northumberland, another on the English side of the Solway, and a few pairs on Dungeness beach, Kent.

It moves northwards in spring to breed on the shore or by fresh-water lochs, and on the shingle of river beds, in Scotland, and also nests in some localities in Ireland. After the breeding season it is generally distributed on the coasts as well as inland throughout the three countries.

The bird has a wide range over Northern Europe and Asia, migrating from the colder parts of its habitat in winter, when its visits extend to the Persian Gulf, Japan, and China.

The nest, composed of pieces of turf, grass, sea-weed, etc., usually contains three eggs, in ground colour greenish or yellowish-brown, marked with streaks and spots of blackish-brown and purplish-grey.

According to MacGillivray, "When feeding along with Rooks in pasture ground they are often found to be less wary than these birds, especially in places where they are not much liable to be molested. They never, I think, molest any other bird, nor are they at all addicted to quarrelling among themselves. Their food consists of small fishes, such as sand-eels and young herrings, which they pick from the water, first hovering with extended and elevated wings, then descending, spreading their tail, and letting down their feet, with which I have often seen them pat the water as if they were running on land. They never plunge so as to be immersed, but

merely seize on what comes close to the surface. They also feed upon stranded fishes of large size, asteriæ, mollusca, shrimps, and other small crustacea. Sometimes also they pick up grain in the fields, and in a state of domestication may be partly fed on bread."

In winter the head and neck are streaked with dusky brown.

Length, about 18 inches ; wing, about $14\frac{1}{2}$ inches.



HERRING-GULL (*adult and young*)

THE HERRING-GULL

Larus argentatus, J. F. Gmelin

PLATE 172

Abundant on all our coasts and estuaries throughout the year and often seen inland, this species appears to be more numerous than any other of our larger Gulls. It breeds in Northern Europe, where it ranges as far east as the White Sea, and also in Arctic America. In winter it migrates southwards to the Mediterranean, and in the New World to South America.

The Herring-Gull usually breeds on the steep faces of rocky cliffs or on the grass-covered tops of islands, and makes its nest of grass and similar material. The three eggs vary much in colour and markings, often they are greenish-brown, spotted and blotched with dark brown and purplish-grey, or the ground-colour may be light bluish-green, reddish, or yellowish-grey.

This bird is almost omnivorous; pursuing the shoals of fish, from which it takes its toll, it haunts the shores at low-water in search of crabs and other crustaceans, follows in the wake of vessels in order to obtain scraps of food, or robs other species of their eggs; it will also feed on carrion. In fishing-villages it becomes very tame, and may often be seen perched on chimneys, housetops, or sometimes on flag-staffs.

Its cry is loud and harsh, and not unlike a laugh, while, in common with the other big Gulls, it often emits a succession of yelping notes from its widely-opened mouth as it stands erect on some rock or sandbank.

In winter the head and neck of the adult bird are streaked with grey. The immature birds are mottled with brown and grey and do not attain their full plumage for some years.

Length, 24 inches; wing, $17\frac{1}{2}$ inches.

THE YELLOW-LEGGED HERRING-GULL

Larus cachinnans, Pallas

One example of this species was obtained on Breydon Water, Norfolk, in November, 1886, and three others seen, namely, at Dover, April, 1904, Formby shore, Lancashire, February, 1918, and Fair Isle, Shetlands, September, 1921. It inhabits the Mediterranean shores and ranges through Western Asia as far as Lake Baikal, and differs chiefly from our bird in having the legs and feet yellow instead of flesh-colour. The grey mantle is also slightly darker and the orange-red on the bill and eye-lids brighter in colour. The habits and nidification of the two species are alike.

Length, 23 inches ; wing, 18 inches.



THE LESSER BLACK-BACKED GULL

Larus fuscus, Linnæus

PLATE 173

The Lesser Black-backed Gull is a common bird in spring and summer along the shores of the British Islands and in some inland localities, breeding in large colonies in many places from the Shetlands to the Isles of Scilly, though it is not in general so widely distributed in summer as the Herring-Gull. It inhabits Norway, Sweden, and Northern Russia as far east as the Dwina, and breeds as far south as the Mediterranean; while in winter it visits the west coast of Africa, the Red Sea, and Persian Gulf.

The majority of the birds found on the continent of Europe have a darker mantle than our Gull, which Dr. Percy R. Lowe has separated as a subspecies, but this continental form also occurs in the British Islands.

The Lesser Black-backed Gull, in the breeding season, shows a preference for islands, such as the Farnes off the coast of Northumberland, or the islets so numerous in Scotland, among the waters of fresh-water lochs, although the birds also breed on moors or in bogs. The nest is composed of dry grasses, heather, etc., and contains usually three eggs, varying in ground-colour from pale greenish-blue to brown, blotched and spotted with purplish-grey and deep brown. The birds usually breed in colonies.

The food is similar to that of the Herring-Gull, but the present species appears to be even more destructive to the eggs of game birds and wild fowl than the other. The cries of the two species are much alike, but practised ears can detect a difference.

In winter, when most of the birds leave the British Islands, the head and neck are marked with dusky streaks, while the young more or less resemble those of the Herring-Gull.

Length, 22 inches ; wing, $16\frac{1}{2}$ inches.



GREAT BLACK-BACKED GULL (*adult and young*)

THE GREAT BLACK-BACKED GULL

Larus marinus, Linnæus

PLATE 174

This very handsome bird, the largest of our British Gulls, is resident and abundant on certain parts of our coasts and islands and may often be seen inland. It has various breeding stations on the western coasts and islands of England and Wales, but nests in much greater numbers in the northern parts of Scotland and Outer Hebrides. It is also a summer resident in Northern Europe and Siberia, and in winter wanders as far as the Mediterranean, the Canaries, and the Azores. Across the Atlantic its summer quarters are in North America, whence it migrates in the cold season to the southern parts of the continent.

The Great Black-backed Gull usually breeds in colonies, though sometimes singly, and chooses for its nesting ground the flat grassy top of a high rocky islet or stack in the sea and often some lower situation surrounded by the waters of a loch. The nest is made of dry grasses, sea-weed, etc., and contains two or three eggs, greenish or greyish-brown in ground-colour, with markings of dark brown and grey. The food is various, comprising fish, the eggs and young of other birds and offal of all kinds, while the bird often joins the Raven and Hooded Crow when feasting on dead sheep or other carrion on the moors.

The wide stretch of wing, extending over five feet from tip to tip, enhances the grand appearance of this Gull in flight, when its loud, cackling, laughing cry can be heard afar. In character it is bold and masterful, but at the same time wary and shy in the presence of human beings.

It can always be recognised by its large size, black mantle, and pale flesh-coloured feet. In winter, the white head and neck are streaked with brownish-grey.

Length, 29 inches ; wing, $19\frac{1}{2}$ inches.



GLAUCOUS GULL

LITTLE AUK (*summer*)

THE GLAUCOUS GULL

Larus glaucus, O. Fabricius

PLATE 175

This large white-winged Arctic species, in size about the same as the Great Black-backed Gull, visits the shores of our northern islands and eastern coasts of Great Britain in winter, sometimes in considerable numbers, and often at the same time wanders to Ireland. Breeding as near our coasts as Iceland, where it is found throughout the year, it inhabits the circumpolar seas, whence a good many birds migrate on the approach of the northern ice to more southerly regions; it then ranges in Europe as far as the Mediterranean and the Black and Caspian Seas, in Eastern Asia to Japan, and in America to Florida.

The nest is sometimes situated at low elevations on sandy or shingly shores, or more often high up on cliffs, and is composed of moss, sea-weed, etc. The eggs, usually about three in number, are pale greyish-brown, spotted with dark brown and grey.

Predatory in its habits and of an aggressive and domineering disposition, this Gull was known as the "Burgomaster" by the old mariners of the Arctic seas. It feeds on carrion of various kinds and preys largely on the smaller Arctic birds and their eggs, often haunting the breeding stations of Brünnich's Guillemot and the Little Auk, the latter species being often killed and eaten.

The bird in the plate is shown in summer plumage; in winter the head and neck are streaked with brownish-grey. The young take several years to reach maturity and are dull yellowish-white in colour, mottled with shades of brown blended with grey. The colour becomes paler and whiter as the birds approach the adult stage.

Length, 29 inches; wing, $18\frac{1}{2}$ inches.

THE ICELAND GULL

Larus leucopterus, Faber

PLATE 179

Closely resembling the Glaucous Gull in colour, though smaller and relatively with much more length of wing, and distinguished from the other British Gulls by the white pinion tips, this species may occasionally be seen off the English coast in winter, but much more frequently in the Shetlands and on the north-eastern coast of Scotland than in other parts of the British Islands.

Jan Mayen Island, Greenland, and the Arctic regions of America appear to be its chief breeding grounds, whence it wanders to more southerly climes for the winter.

The birds breed in colonies, and the nest, placed on the ledges of cliffs or on sandy shores, contains from two to three eggs, in ground colour greenish-drab, marked with blotches of brown.

Harvie-Brown, comparing the flight of the Glaucous and Iceland Gulls, noted that the latter was more airy and buoyant, and Saxby, in his *Birds of the Shetland Isles*, p. 336, observed that it could be readily recognised at a distance "by its acutely pointed and somewhat long white wings."

In winter, the head and neck are marked with dusky streaks, the bird in the plate being shown in summer plumage.

Length, 22 inches ; wing, about 16 inches.



KITTIWAKE GULL (*adult and young*)

THE KITTIWAKE GULL

Rissa tridactyla (Linnæus)

PLATE 176

The Kittiwake may be seen along the coast at all times of the year, in autumn often assembling in large flocks as I have seen it on the shores of Arran, but it never goes inland except by accident. In summer it is more locally distributed, though not less abundant, when it breeds in large numbers on the steep rocky cliffs of our shores and islands.

This circumpolar species nests throughout a great part of the Arctic and sub-Arctic regions of the Old and New Worlds, and migrates from the colder portions of its range in winter. The birds breed in colonies, and the nests, rather compactly built of sea-weed, moss, or grassy turf, are placed on ledges, sometimes so narrow that there seems scarcely room for the bird to turn. The two or three eggs are pale olive or greenish-white, blotched with dark brown and purplish-grey.

A colony of breeding Kittiwakes, such as that on the precipitous island of Handa, on the west coast of Sutherland, where the birds are seen dotted along the face of the cliffs or wheeling in thousands over the sea far below, like drifting snow-flakes, is a never-to-be-forgotten sight. When building their nests, a constant stream of birds may be seen moving in two lines as they pass to and fro from the interior of the island, where they obtain nesting material, to the cliffs. Here they can be watched at close quarters, as they are very tame at this time, in company with Puffins, Razorbills and Guillemots, whilst little can be heard beyond the loud clear cries of the Kittiwake, which have given the bird its name.

The food consists chiefly of fish, which the bird, as Mr. R. J. Howard informs me, not only catches close to the

surface of the water, but after which it frequently dives and pursues for a considerable distance.

The late Lord Lilford found that a captive bird only throve on a diet of worms, and actually starved when the supply failed.

Immature birds, sometimes called "Tarrocks," may be known by the blackish bar across the back of the neck and the dark band on the upper part of the wing, as shown in the plate.

In this species the hind toe is absent or only rudimentary. Length, $15\frac{1}{2}$ inches ; wing, 12 inches.



IVORY GULL

BLACK GUILLEMOT (*summer*)

THE IVORY GULL

Pagophila eburnea (Phipps)

PLATE 177

This beautiful species is a rare visitor, more often seen off our northern coasts than elsewhere in the British Islands, and usually in winter. Inhabiting the icy seas of the Polar regions, where it is abundant in summer, it wanders southwards as the cold increases, when some of the birds find their way to Europe and others to North America.

When breeding, the birds associate in colonies and place their nests on rocky shores or high up on cliffs, usually in the neighbourhood of seal-haunted ice floes. The nest, built of sea-weed, lichen, splinters of drift-wood, and feathers, usually contains two eggs, in ground colour pale greenish-brown, spotted and blotched with dark brown.

The birds, besides eating fish, crustaceans, and various marine creatures, eagerly feed on the flesh of dead whales and other mammals.

Mr. Francis A. Montagu, writing on the birds observed in Spitzbergen (*Ibis*, January, 1926, pp. 147, 148), says :

“The old birds were bold in defence of their nests, and swooped with fierce screams at the head of a climber on the cliff. I was struck on the head repeatedly. The blow is delivered with the front of the feet which are dangled. . . . Though generally unwilling to enter water, the Ivory will do so on occasions ; a bird which had tried unsuccessfully to pick up the carcase of a Little Auk with its beak, and then with its feet, while hovering above the water, finally settled on the surface to get a good grip of it. . . . But this is very unusual.”

The drawing of this species in the plate was taken from

a sketch of a living specimen in the Zoological Gardens of London.

The plumage of the young bird is spotted with black, until it attains maturity.

Length, 18 inches ; wing, 13 inches.



FAMILY STERCORARIIDÆ

THE GREAT SKUA

Megalestris catarrhactes (Linnæus)

PLATE 178

This predatory species, the largest of the Skuas or "Robber" Gulls, which in the British Islands at one time only nested on the islands of Unst and Foula, has now not only greatly increased in numbers and extended its breeding range among the Shetlands, but during the last twelve years has also bred in the Orkneys. In winter it wanders far from land, though occasionally seen off various parts of our coasts.

Abroad, it nests in Iceland and the Færoe Islands, and as a migrant visits the Mediterranean and also American waters.

Known in the Shetlands as the "Bonxie," the Great Skua usually breeds in colonies high up on the moors among heather, where a slight hollow in the mossy ground, scantily lined with bents, etc., serves as a nest. This contains two eggs, in colour a pale greenish-brown, marked with deeper brown.

Like other members of this family, this species obtains a large proportion of its food by chasing the weaker and smaller Gulls and compelling them to disgorge their rightful prey, which is deftly caught by the marauder before reaching the water. This Skua also kills and devours other birds, while food such as fish and carrion stranded on the shore is not unwelcome.

When their eggs or young are in danger the parent birds are very bold and fierce and do not hesitate to attack human beings, and, according to MacGillivray, a pair have been seen to beat off an Eagle from their territory. Their cry is loud and sharp, but sometimes rather plaintive.

Length, 21 inches ; wing, 16 inches.

THE POMATORHINE SKUA

Stercorarius pomatorhinus (Temminck)

PLATE 179

The Pomatorhine, or Twist-tailed Skua, visits our shores more or less regularly in autumn, sometimes in large flocks, and appears more often off the eastern coasts than in other parts of Great Britain. In summer it inhabits the Arctic regions of Asia and America and moves southwards in winter, roving at this time as far as the Mediterranean, South Africa, South America, and Australia.

The two eggs, greenish-brown in ground colour, and blotched with blackish-brown, are laid in a slight hollow in the mossy ground. This species, like the Arctic or Richardson's Skua, is dimorphic, exhibiting in both sexes a dark and light phase of plumage, the latter being shown in the plate. In colour the dark form is of a more or less uniform brownish-black.

This species, besides robbing weaker species, such as Terns and Gulls, of their food, often hunts down and kills smaller or wounded birds and also mammals, especially the Lemming. It also catches fish for itself.

Length, 21 inches ; wing, $14\frac{1}{4}$ inches.



ICELAND GULL

POMATORHINE SKUA



ARCTIC OR RICHARDSON'S SKUA

THE ARCTIC OR RICHARDSON'S SKUA

Stercorarius crepidatus (J. F. Gmelin)

PLATE 180

This Skua is the most abundant of its kind in the British Islands, breeding in colonies, not only in the Shetlands, Orkneys, and the Hebrides, but on the mainland of Northern Scotland as well, though in smaller numbers. In autumn, during migration it is dispersed along our coasts, chiefly on the eastern shores of England and Scotland, and also on the western side of the latter country.

Abroad it nests in the Færoes, Northern Europe and Asia, Greenland, and the Arctic parts of America.

The nest is placed among grass or heather in wet moorlands or among the moss of the tundras, and contains two eggs of a dull olive colour, blotched with brown.

The birds fiercely attack any intruder on their domain, and being predatory in their habits, like the other Skuas, they obtain a great part of their food by robbing weaker Gulls.

There are two distinct forms of this species, one with the throat and under parts light, and the other entirely dark as shown in the plate. Birds are found breeding indiscriminately in both these phases of plumage.

Length, about 20 inches ; wing, 13 inches.

THE LONG-TAILED OR BUFFON'S SKUA

Stercorarius parasiticus (Linnæus)

PLATE 181

This slender and very elegant bird, easily recognised when in adult plumage by the long flexible central tail-feathers, is an Arctic species and a rather rare visitor to the British coasts, chiefly in autumn. It breeds in the high northern latitudes of Europe, Asia, and America, while in winter it seeks more southerly regions.

The nest is a mere depression among the moss and lichen of the tundra, and contains two eggs, which, according to Dresser's *Manual of Palæarctic Birds*, are similar in appearance to those of the Arctic Skua, but as a rule greener in tone and subject to considerable variation. This species is like the other Skuas in its marauding habits, and preys largely on Lemmings.

Length, 23 inches ; wing, 12 inches.



LONG-TAILED SKUA

LITTLE AUK (*winter*)



COMMON GUILLEMOT
RAZORBILL

ORDER ALCÆ

FAMILY ALCIDÆ. SUBFAMILY ALCINÆ

THE RAZORBILL

Alca torda, Linnæus

PLATE 182

Common throughout the year in the British seas, the Razorbill only comes ashore in late spring to breed in vast numbers on precipitous sea-cliffs on the mainland and islands. It breeds in suitable localities in the North Atlantic Ocean, in Europe, and America, and wanders southwards in winter.

The single egg is laid on an open ledge of rock, or more often in some sheltered cranny or recess, and in colour and markings varies less than that of the Guillemot, while it is less pyriform in shape. The usual ground colours are a pale brownish-buff or dull white, rarely showing any greenish tint, with blotches and various streaks and dashes of umber-brown and black.

Under the guidance of the parent birds, the young somehow manage to reach the water before they can fly and soon learn to get their own food, which consists of fish and crustaceans obtained by diving.

The Razorbill occasionally utters a low croaking note, but is otherwise a silent bird. Its knife-like bill, grooved and crossed by a white line, and the pointed tail serve to distinguish the bird from the Guillemot. It differs also in the colour of the upper parts, which are black, those of the last-mentioned bird being greyish-brown.

Length, 17 inches ; wing, $7\frac{1}{2}$ inches.

THE GREAT AUK

Alca impennis, Linnæus

An interesting and concise history of this fine bird, exterminated over eighty years ago, has been given by the late Professor Newton in his *Dictionary of Birds* under its old name of Gare-fowl, from which it appears that, contrary to a common misapprehension, the Great Auk, with perhaps one doubtful exception, never inhabited the seas within the Arctic Circle, but was found south of that line in the North Atlantic. Though occurring in the Orkneys and St. Kilda, it appears chiefly to have frequented Iceland, the Færoes, South-eastern Greenland, Newfoundland—where it was abundant—and the Labrador coast, and its destruction was ruthlessly carried out, partly in the first instance by fishermen for food and bait, and, as the bird became scarcer, its extermination was completed to furnish specimens and eggs for collectors and museums. Another circumstance which hastened the end appears to have been the destruction of one of its principal breeding stations off the coast of Iceland by a volcanic eruption. Unfortunately for the bird, it fell an easy prey to its enemies when it arrived at the low-lying rocks which served as nesting places, as, owing to its very diminutive wings and heavy body, it was quite unable to fly.

An example, now in the British Museum, was taken in the Orkneys about 1813, two are said to have been secured at St. Kilda, about 1821 and 1840, whilst a pair, the last of their race, were obtained as late as 1844 on some skerries off the coast of Iceland.

The single egg was apparently laid on the rocks, and the colour of those left to us is usually buffish-white, blotched

with dark brown and grey. According to Mr. E. Bidwell, as quoted in *A Practical Handbook of British Birds* (Vol. II., p. 796), only “ eighty skins and seventy-five eggs ” are known to exist.

The food and habits of the Great Auk in general appear to have resembled those of the Razorbill, and in colour it was much the same as the latter bird, with the exception of a patch of white in front of the eye, instead of a narrow white line. In winter the chin and throat became white.

Length, about 32 inches ; wing from flexure, 7 inches.

THE COMMON GUILLEMOT

Uria troile (Linnæus)

PLATE 182

This is a common bird on and off the shores of Great Britain throughout the greater part of the year, coming like the Razorbill, but in greater multitudes, to breed on the cliffs and precipices of our sea-coast and islands.

The Guillemot has a wide range on both sides of the Atlantic, migrating southwards in winter. The birds breeding on our coasts, according to Mr. Witherby, appear to be of two forms, the northern a rather darker bird than the southern. A slightly larger race inhabits the Pacific.

The female lays her single egg on the crowded and narrow ledges of high precipitous cliffs, sometimes in such precarious situations that a careless or sudden movement of the bird or an unexpected gust of wind sends it into space, notwithstanding its pear-like shape, which no doubt helps to keep the eggs from straying.

The variety of colour in the latter is remarkable, ranging from white, pale cream, or reddish, to pale bluish or deep blue-green, with scribbled lines and blotches of various shades of red, dark brown, or black. Some eggs are of a deep chocolate red, others with a pale ground colour without any markings. It has been noticed that each female always produces the same type of colour and markings in her eggs. As soon as the breeding season is over the Guillemots go out to sea, and, considering their vast numbers, it is difficult to say why comparatively so few are seen during winter. The food, consisting chiefly of fish, is obtained by diving.

A variety of this species, known as the Bridled or Ringed Guillemot, which only differs in having a distinct circle of

white around the eye, continued in a straight line backwards, is shown behind the principal figure in the plate.

In winter the throat becomes more or less white.

Length, about 18 inches ; wing, $7\frac{1}{2}$ inches.

BRÜNNICH'S GUILLEMOT

Uria bruennichi, E. Sabine

This species is the Arctic representative of the Common Guillemot, and is a rare straggler to our eastern coasts in winter. It is larger and blacker in the colour of the upper parts than our bird, while the bill is deeper and heavier and marked with a pale line on the edge of the upper mandible.

It breeds in Iceland, Spitzbergen, Novaya Zemlya, and throughout a great part of Arctic Asia and America, where it nests in large colonies on high precipitous cliffs.

Length, 18 inches ; wing, $8\frac{1}{4}$ inches.

THE BLACK GUILLEMOT

Uria grylle (Linnæus)

PLATE 177

This species, known also as the “Tystie,” has a more northern range in our islands than the Common Guillemot, and does not now breed on the English mainland, though in summer a few frequent the Isle of Man for this purpose.

It nests in some numbers in the Orkneys and Shetlands, the Hebrides, on the rocky shores of northern and western Scotland, and also in Ireland, and in winter is chiefly found in the waters around the north of Scotland and the Irish coasts.

It inhabits the coasts of Northern Europe and other localities eastwards to the White Sea and the north-eastern side of America.

The Black Guillemot differs in habits from the common species, laying two eggs instead of one, and these are placed in crevices among rocks or under slabs of stone. In ground colour the eggs are more or less white, with a tinge of pale blue or green, blotched and spotted with dark brown and shades of purplish-grey.

MacGillivray says: “Their food consists of small fishes and crustacea, in search of which they frequent less the sounds and bays than the open sea. On all the coasts of Scotland, the fry of the Coal-fish is a very common article of food with them, as with many other sea-birds. About most of their breeding places, I have not observed them to proceed daily to a great distance; but on leaving the rocks with their young they disperse over the ocean, entirely deserting their breeding places until the next spring. Yet they do not migrate far southward with us, most of them

remaining all winter in the north. This species sits lightly on the water, on which it paddles about in a lively manner. It dives with rapidity, like a shot as it were, opening its wings a little, and under water actually flies, as I have often seen."

The bird is easily identified at a distance in its summer dress, the black plumage of the body showing up the pure white wing-patches. In winter the head, neck, and under parts become white, shaded and marked with black; the upper parts are black, with the feathers broadly margined with white; the rump is nearly white, the wings and tail much as in summer.

Length, 14 inches; wing, $6\frac{1}{2}$ inches.

THE LITTLE AUK

Mergulus alle (Linnæus)

PLATES 175 AND 181

The Little Auk, whose summer home is among the rocks and islands of the Arctic seas, as a rule only visits our coasts in winter, where it occasionally occurs in large numbers, especially after stormy weather, and at such times is often found far inland in a helpless condition.

As an instance of the destruction of bird life by severe weather, I once counted no less than ninety remains of various species, including three of the Little Auk, during a short afternoon's walk along the shores of the Moray Firth.

This bird is more often seen on our northern coast line than further south in Great Britain. At their breeding stations on Spitzbergen, Novaya Zemlya, and other Arctic lands, they congregate in multitudes, nesting within dark recesses under loose rocks and stones, where they are safe from the attacks of foxes.

According to Mr. Francis A. Montagu in "Further Notes from Spitzbergen" (*The Ibis*, January, 1926, p. 151), the Little Auk "nests either in small vertical crevices or, more commonly, in a sort of warren in the scree above the steeper slopes of the mountains. The breeding colonies of this species are usually haunted by one or more pairs of Glaucous Gulls, which prey upon the Auks to a considerable extent. The principal summer food of these Auks is a small crustacean, *Mysis*, inhabiting the deeper waters of the bays. . . . Mr. Elton made some interesting observations on the social activities of these birds. They are not gregarious when feeding, but move about quite independently of one another. When their stomachs and crops are full, they assemble in

close compact flocks, and remain thus gathered together for company, conversation, and digestion. . . . When digestion is completed, they scatter again, either to continue feeding or to return to the colony."

Only one egg is laid, which in ground-colour is pale greenish-blue, sometimes dotted and streaked with pale red.

Birds in full summer plumage are seldom seen in the British Islands, but one lent to me by Mr. Millais was obtained in June, 1881, in Monifieth Bay, Forfar.

Length, $8\frac{1}{2}$ inches ; wing, $4\frac{1}{2}$ inches.



PUFFIN

SUBFAMILY FRATERCULINÆ

THE PUFFIN

Fratercula arctica (Linnæus)

PLATE 183

This oceanic species spends the greater part of its life at sea and only comes ashore to breed. Vast numbers arrive for this purpose about the end of March or a little later and depart in the latter half of August.

Its breeding stations are numerous on the mainland and islands of Scotland, while on the eastern side of England colonies are found on the Farne Islands, Northumberland, and Flamborough Head, Yorkshire; farther south a few birds nest on the Isle of Wight and on the mainland of Dorset, Devonshire, and Cornwall, becoming again numerous on the Isles of Scilly, Lundy Island, and in Wales. It is also common in Ireland and inhabits the North Atlantic, ranging from the coasts of Europe to those of Greenland and Labrador. Somewhat larger races of the Puffin occur in the more northern part of its range.

Steep grassy slopes or cliffs overhanging the sea or low turf-covered islands are chosen as nurseries, where the birds dig out tunnels by means of their strong bills or occupy openings in the rocks or under stones. Sometimes rabbit holes are chosen.

The single egg when first laid is dull white, faintly spotted with pale brown and grey, later becoming more or less soiled and darkened.

The young, clothed at first in soft fluffy down, used to be much esteemed as food, and the name Puffin, according to Professor Newton (*Dictionary of Birds*, p. 751), was no doubt

applied to these owing to their downy covering. He also says, "In 1345, according to a document from which an extract is given in Heath's *Islands of Scilly* (p. 190), these islands were held of the crown at a yearly rent of 300 Puffins, or 6s. 8d., being one-sixth of their estimated annual value."

The nestlings are assiduously attended to by the parent birds, who may be seen constantly flying to and fro carrying a supply of small fishes held across the mandibles, a curious fact when one considers the difficulty of securing and packing the catch.

The strong and vividly coloured bill of this species is triangular in form and resembles the fore iron of a plough, hence the bird's name of Coulterneb. After the breeding season the bill is much reduced in size, owing to the shedding of the sheath on the frontal part, and at the same time the bluish appendages above and below the eye are also shed.

On the ground the Puffin stands as shown in the plate, and does not rest on the tarsus like the Razorbill and Guillemot. It differs also from them in having the innermost claws on each foot placed horizontally for some unknown purpose, but as these are more hooked than the other claws, they may possibly be of use when arranging the row of small fish between the mandibles when carrying food to the young.*

Length, 30 inches ; wing, 6 inches.

* Mr. R. J. Howard says :

"So far as I have been able to find out, no reference has ever been made to the obvious relationship between the moulting of the horny sheaths of the bill and the use to which the claws on the inner toes are put.

"As you will see from the plate illustrating the article 'On the moult of bill and palpebral appendages in the Common Puffin,' which appeared in the *Zoologist*, 1878, the parts moulted are saddle-shaped, astride the basal part of the beak ; even when loose they could not well be removed without assistance. Special provision for the removal of these pieces is necessary ; nails on the inner toes similar to those on the others would be useless. Strong, decurved, sharp pointed claws, laid flat as shown in the plate, are admirably suited for the purpose ; better tools could not be devised.

"Less evident is the use of a small rudimentary nail under that of the third toe."



ORDER PYGOPODES

FAMILY COLYMBIDÆ

THE GREAT NORTHERN DIVER

Colymbus glacialis, Linnæus

PLATE 184

This large Diver is a winter visitor to the waters of the British coasts, and has never been known to nest in our islands, though mated pairs in full breeding dress are sometimes observed in summer, not infrequently about the Scilly Islands, where I have seen them in May.

It breeds in Iceland, Greenland, and in the colder parts of North America, whence it migrates southwards in winter.

The nest, composed of aquatic plants, is always placed either on the shores or on some small island on fresh-water lakes, so that at the least suspicion of danger the bird can slide stealthily into the water. The two eggs, varying in ground-colour from greenish to reddish-brown, are usually blotched with black.

The food consists of fish and crustaceans, often obtained at a great depth, as the bird, like all the members of its family, is a very fine diver and can remain under water for a considerable time. It has, in common with the other divers, a habit of sinking its body when swimming, so much so that often little more than its head and neck are visible above the surface. In the breeding season it utters a strange melancholy cry, while at other times it will emit a low croaking sound, according to MacGillivray.

In autumn the bird loses the rich glossy black of its plumage and checkered pattern and stripes on body and neck.

Length, 32 inches ; wing, 14 inches.

THE WHITE-BILLED NORTHERN DIVER

Colymbus adamsi, G. R. Gray

This species differs from the Great Northern Diver in having a heavier and more angular bill, with the line of the upper mandible straight instead of being curved and of a yellowish ivory colour. Another distinction has been pointed out by Howard Saunders (*Manual of British Birds*, 2nd ed. p. 711), viz., that in the present species the upper part of the head and neck have a greenish sheen, changing to purple below, whereas in the other these colours are reversed. The streaks of white on the neck are also fewer in number and broader in the White-billed species.

About four authentic occurrences have been recorded in England, some other records are uncertain. It breeds in Novaya Zemlya and Northern Asia, ranging eastwards to the Arctic regions of the New World.

In habits the two species appear to be alike, and in their winter plumage closely resemble each other.

Length, 33 inches ; wing, about 15 inches.



THE BLACK-THROATED DIVER

Colymbus arcticus, Linnæus

PLATE 185

Though breeding regularly in the northern parts of Scotland, this very beautiful bird is not so common off our shores in winter as the Great Northern Diver.

It inhabits the northern parts of Europe, Asia, and America, and in winter migrates to more temperate regions, where in Europe it occurs as far south as the Mediterranean and the seas of Southern Russia, in Asia ranging to Japan, and in America to the Eastern United States.

In Scotland, where it is much persecuted by egg collectors, it usually breeds on some island in a fresh-water loch, sometimes a large sheet of water like Loch Maree, where I have seen the nest, at other times it may be a comparatively small lake.

The two eggs, greenish or reddish-brown in colour, spotted with black or brown, are laid in a slight hollow in a bed of herbage collected by the bird. Like other members of this genus, the Black-throated Diver makes its nest close to the water's edge, so that the bird in case of need can quickly reach a place of safety by sliding to the water.

When watching the only nest of this species I have seen, which contained a broken egg, apparently damaged by Gulls, one of the parent birds could be observed quietly swimming around and occasionally dipping its bill in the water.

During the breeding season the cry is loud and harsh.

The sexes are alike in colour, and in winter have the upper parts dark greyish-brown, with the chin, throat, and under parts white.

Length, 27 inches ; wing, $11\frac{3}{4}$ inches.

THE RED-THROATED DIVER

Colymbus septentrionalis, Linnæus

PLATE 186

The Red-throated Diver is plentiful off the coasts of the British Islands throughout the autumn and winter, and in summer breeds in many localities on the northern parts of the mainland of Scotland, as well as in the Orkneys, Shetlands, and Outer Hebrides, while a few pairs nest in Ireland. It inhabits Iceland, Spitzbergen, Greenland, and the northern parts of Europe, Asia, and America, visiting more southern regions in winter.

Smaller than the other divers, its habits are much the same. When passing from one loch to another it flies at a great pace, and, according to MacGillivray, "in alighting it comes down nearly erect, ploughing up the water for a short way. Its activity in its proper element is astonishing; it swims with extreme speed, keeping deep in the water, and sometimes allowing only its head and neck to emerge. In diving it slips as it were out of sight without noise or flutter, and under water pursues its way with great speed, using its wings as well as its feet. Its food consists of small fishes, especially sprats, young herrings, and codfish, as well as crustacea, and I have usually found numerous pebbles and bits of gravel in its stomach. . . . The nest is placed on an island, or tuft, or among the herbage near the margin or even on the stony beach, of a lake or pool, and is composed of grass, sedge, or heath, or other easily-procured plants, generally in small quantity, and neatly put together."

The eggs, usually two in number, are olive or greenish-brown in colour, generally spotted and blotched with blackish-brown.



RED-THROATED DIVER

In the breeding season this species, like the other divers, utters loud and harsh cries. The sexes are alike in colour. In winter the birds lose the beautiful red patch on the throat and the grey velvety shades on the cheeks and sides of the neck, which become white, while the upper parts of the body are greyer and more marked with white.

Length, 24 inches ; wing, about $11\frac{1}{4}$ inches.

FAMILY PODICIPEDIDÆ

THE GREAT CRESTED GREBE

Podiceps cristatus (Linnæus)

PLATE 187

This beautiful species, the largest of our Grebes, is now not at all uncommon on many of the large inland reedy meres and ponds in the British Islands, and for many years has been increasing in numbers and extending its breeding range in various directions, nesting as far north as Morayshire in 1913. In winter it is chiefly to be found on the coast and estuaries.

It is resident in Central and Southern Europe, and also inhabits Africa and Asia, while closely related forms are found in Australia and New Zealand.

The nest of the Great Crested Grebe is a wet and more or less floating mass of sedges and other water plants on the outskirts of beds of reed or bulrush, and on this structure the three or four and occasionally five eggs are laid, which at first have the ground-colour a chalky white, with an underlying tinge of green, but afterwards become stained to a yellowish-brown or buff. On leaving the nest the parent bird generally covers the eggs with any loose material close at hand.

The food consists of various aquatic insects, fish, reptiles, etc., and, according to MacGillivray, "along with remains of these are usually found in its stomach numerous large curved feathers, which it probably picks up as they float on the water, and which are, no doubt, intended to facilitate digestion." If pursued on the water, the bird generally attempts to escape by diving and swimming, although it can fly swiftly and at some height.



RED-NECKED GREBE

GREAT CRESTED GREBE

In the breeding season it utters a loud harsh cry and has an alarm-note which has been rendered as *kek*, *kek*. The female is smaller and has the occipital tufts and ruff less pronounced than those of the male. In autumn both sexes lose these ornaments. The nestlings are curiously marked with stripes of black and white, and are often carried by the parents when swimming in the hollow between the wings.

Length, 21 inches ; wing, $7\frac{1}{2}$ inches.

THE RED-NECKED GREBE

Podiceps griseigena (Boddaert)

PLATE 187

Though never known to have nested in the British Islands, the Red-necked Grebe visits our coasts in winter, chiefly those of the eastern side of Great Britain, where it occasionally occurs in some numbers.

It is widely distributed in Europe, breeding as far north as Scandinavia and Northern Russia, thence southwards to Germany and the shores of the Black and Caspian Seas. In Asia it is said to occur in Siberia and Turkestan, while in North-eastern Asia and in America it is replaced by a larger race.

In winter it visits the Mediterranean, North Africa, and Egypt.

The Red-necked Grebe builds a floating nest, composed of the dead stems and leaves of water-plants, and lays four or five eggs, resembling those of the Great Crested Grebe but smaller, and in its habits the present species is very much like its larger congener. According to Seebohm, the two species may be seen breeding in company in lakes on the continent of Europe.

Length, 18 inches ; wing, 7 inches.

THE SLAVONIAN OR HORNED GREBE

Podiceps auritus (Linnæus)

PLATE 188

This Grebe is chiefly known as a winter visitor, when it visits not only the sea-coast but also waters lying inland. It also occurs in summer, and for some years has bred regularly in small numbers on lochs in northern Scotland.

It inhabits the circumpolar regions of the Northern Hemisphere, and in winter migrates southwards to warmer regions in Europe, Asia, and America.

The floating nest of this species, like that of its congeners, is made of water plants and contains from three to four or five eggs, in ground-colour white, faintly tinged with bluish, which later become darkened by contact with the surrounding material with which the bird covers them when leaving the nest.

Proctor, who found this species breeding in Iceland, observed that the mother endeavoured to convey her young to safety by diving under water while she held them beneath her wings.

In food and habits this species does not differ from the other Grebes.

Length, $13\frac{1}{2}$ inches ; wing, $5\frac{1}{2}$ inches.

THE BLACK-NECKED OR EARED GREBE

Podiceps nigricollis, C. L. Brehm

PLATE 188

The Black-necked Grebe, apart from its size and colour, differs from the other species in the shape of its bill, which has a slight upward curve. Besides being well known as a winter visitor, this species had bred annually in Wales since 1904, and later in some suitable localities in England, including the Reservoirs at Tring, Hertfordshire. It has also nested in Ireland.

It inhabits the countries of Central and Southern Europe, as well as North Africa, and, according to Dresser, has bred as far north as Denmark, while eastwards it ranges across Asia to Japan and China, and in winter migrates southwards to Cape Colony and India.

It nests on fresh-water lakes sheltered by reeds and sedge, and lays four or five eggs similar to those of the Slavonian Grebe.

In winter the golden ear-tufts are absent, and the chin and throat become white.

Length, 12 inches ; wing, 5 inches.



SLAVONIAN GREBE

LITTLE GREBE
BLACK-NECKED GREBE

THE LITTLE GREBE

Podiceps fluviatilis (Tunstall)

PLATE 188

The Little Grebe or Dabchick is a more or less common bird on many of our still-flowing rivers, ponds, and other waters throughout the year, but is less plentiful in northern Scotland and its islands than in other parts of Britain, while in winter it may often be seen on tidal waters on the coast. It is widely distributed over the continent of Europe, from Scandinavia to the Mediterranean countries, and through Central Asia as far as Japan.

The nest, of the usual Grebe character, consists of a mass of water-weeds and contains from three to six eggs. When newly laid these are nearly white, but soon become stained to a dull buff or brown from contact with the wet and rotting material thrown over them by the bird whenever she has occasion to leave the nest unprotected.

The tiny nestlings are sometimes removed by the mother, who takes them under her wings.

The food consists chiefly of water-insects, tadpoles, and small fishes obtained by diving, and when thus engaged the bird goes under very suddenly without any disturbance of the water and reappears on the surface quite as unexpectedly. The usual cry of the bird in spring is a trilling note.

In winter it loses the rich rust-colour and brown on the head and neck, when the chin becomes white and the brown on head and neck of a paler tint.

Length, $9\frac{1}{2}$ inches ; wing, about 4 inches.

ORDER TUBINARES
FAMILY PROCELLARIIDÆ

THE STORM-PETREL

Procellaria pelagica, Linnæus

PLATE 189

The Storm-Petrel, our smallest web-footed bird, breeds on many of the Scottish islands, including the Orkneys and Shetlands, the Hebrides, and various rocky islands on the western coast, while southwards it is found in similar situations off the coast of Wales, the Isles of Scilly, and also in Ireland.

In Europe it breeds from as far north as the Lofoten Islands in Norway, south to the Mediterranean, and, after nesting, spends the time at sea, when it roves as far as Cape Colony in Africa and westwards to America.

The single egg, which is white in colour and dotted with reddish spots, is laid in a hole in a cliff, at the end of a tunnel in some grassy slope, or under stones, where occasionally a scanty nest is formed of bents and bits of earth.

The Petrels seek their food upon the waters, skimming just above the waves, usually following their curves, while skilfully avoiding the breakers, and often touching the surface with their feet outspread. This habit has presented to the minds of sailors the experience of the Apostle Peter, and hence the name of Petrel.

Known also as Mother Carey's chickens, they frequently accompany ships on their voyage across the ocean, following in their wake for many miles, no doubt attracted by the various oily substances and other animal matter which may



STORM-PETREL
WILSON'S PETREL

LEACH'S FORK TAILED PETREL

be thrown overboard. They also eat small crustaceans and fishes. The presence of these little birds as they glide around a vessel is supposed by the seamen to foretell the approach of stormy weather.

MacGillivray, describing them as seen in the waters around the Hebrides, says : “ In the open ocean, they are met with by day as well as by night ; but when breeding, they are seen in the neighbourhood of their haunts, that is, to the distance of twenty or more miles around, chiefly in the dusk and dawn, and during the day remain concealed in their holes. Stormy weather does not prevent their coming abroad, nor are they less active during calms.” In the breeding season, when underground in their nesting holes, the birds utter a kind of continuous crooning note.

As in all the Petrels, the male and female are alike in colour.

Length, $6\frac{1}{2}$ inches ; wing, about $4\frac{2}{3}$ inches.

LEACH'S FORK-TAILED PETREL

Oceanodroma leucorhoa (Viellot)

PLATE 189

This species, first discovered as a British bird by Bullock in 1818 on St. Kilda, is now known to breed there as well as on the Flannan Isles and the Outer Hebrides, also on islands off the Irish coast.

In autumn it often approaches the shores of England and seems even more liable to be driven inland by stress of weather than the Storm-Petrel. It inhabits the northern parts of the Atlantic and Pacific Oceans, breeding as far away as Greenland and Alaska, and wandering south in winter.

Like other species, it follows in the wake of vessels, when it may be distinguished from the Storm-Petrel by its forked tail, larger size, and rather lighter and greyer colour. It breeds in colonies, and its single egg, which is laid within a burrow, is pure white in ground-colour, marked with a zone of tiny spots of reddish-brown. Like other members of the family, Leach's Petrel is more or less nocturnal in its habits, becoming active as darkness comes on, when it flits to and fro incessantly uttering its sharp, querulous notes. The food is similar to that of the Storm-Petrel, consisting of small floating molluscs, crustaceans, and oily substances on the sea.

Length, 8 inches ; wing, 6 inches.

MADEIRAN FORK-TAILED PETREL

Oceanodroma castro (Harcourt)

This species, a rare bird in the British Islands, has only been thrice recorded, the first at Littlestone, Kent, in December, 1895, the second at Hythe, in the same county, in November, 1906, and the last at Milford, Hampshire, November, 1911.

Formerly known as Ridgway's, and now sometimes called Harcourt's Petrel, it nests on the rocky islets of Madeira, the Salvages, Azores, and Cape Verde Islands in the Atlantic, while its breeding range extends as far as the Sandwich and Galapagos Islands in the Pacific Ocean. Like other Petrels it is an underground breeder, nesting in burrows. It lays a single egg, which, according to Ogilvie-Grant (*Ibis*, 1896, p. 54), is "white, with an indistinct zone of light red and faint purplish underlying dots round the larger end." In habits this species does not appear to differ from the other smaller Petrels.

In colour it is much like Leach's Forked-tailed Petrel, except that some of the white feathers of the upper tail-coverts are tipped with black and the lower flanks show more white. The tail is also slightly less forked.

Length, 8 inches ; wing, about 6 inches.

WILSON'S PETREL
Oceanites oceanicus (Kuhl)

PLATE 189

Wilson's Petrel is a rare visitor to the British Islands, though it was seen in some numbers near Land's End in May, 1838, and about a dozen examples have since been obtained.

It breeds on Kerguelen and in other localities far southwards in the Antarctic regions, and wanders northwards in the cold season, when it ranges far and wide over the Atlantic, Indian, and South Pacific Oceans, visiting the Azores, Canaries, and coasts of France and Spain, and also Labrador.

The single large white egg, zoned with small reddish-brown spots, is laid in a chink or cavity under a boulder or broken rock, usually without any nesting material.

This Petrel is a very abundant species in the waters of the Antarctic, wandering far and wide over the ocean, and at their nesting stations utter curious croaking notes in the evening. It may be distinguished from Leach's and the Madeiran Forked-tail Petrels by the square-cut tail, long legs, and orange-yellow streak on the webs between the toes. Its food and habits appear to be much the same as its allies.

Length, 7 inches ; wing, 6 inches.

THE FRIGATE-PETREL

Pelagodroma marina (Latham)

The Frigate-Petrel has only been obtained twice in the British Islands, the first washed ashore on the outside of Walney Island, Lancashire, in November, 1890, and the other captured alive on the island of Colonsay, Inner Hebrides, in January, 1897.

It breeds on various islands in the Southern Pacific, and in the Atlantic Ocean, as near our coasts as the Salvages, north of the Canaries, where Ogilvie-Grant found the bird nesting abundantly in April, 1895.

The one egg, in ground-colour white, minutely spotted and zoned with purplish and reddish dots, is laid in a burrow. The birds nest in colonies, and, being nocturnal in their habits, sally forth at dark with uncertain, wavering flight.

In colour the bird has the crown of the head, ear-coverts, and nape of a brownish or greyish slate-tint; upper part of the back grey; outer parts of the wings brownish, becoming black towards the tips; lower back and upper tail-coverts pale bluish-grey.

The forehead, lores, eye-stripe, throat, and under parts are white, mottled in parts with brownish-grey; the tail chiefly black; the bill and feet also black, the latter with yellow webs.

Length, $7\frac{3}{4}$ inches; wing, $6\frac{1}{4}$ inches.

FAMILY PUFFINIDÆ

THE GREAT SHEARWATER

Puffinus gravis, O'Reilly

PLATE 190

The Great Shearwater visits the British Islands more or less regularly in autumn, when it is sometimes plentiful off our southern and western coasts. Little is known about the breeding habits of the bird, except that it has been found nesting on one of the islands of the Tristan d'Acuna group and lays a single white egg.

In winter it wanders over the Atlantic, from Greenland to the Cape of Good Hope and the Falkland Islands.

The food consists of small cuttlefish, etc., and oily animal substances obtained in the sea, over whose waves the Shearwater glides in long undulating curves, and from this peculiar style of flight the bird and its relations have taken their name.

Length, 20 inches ; wing, about $12\frac{3}{4}$ inches.



SOOTY SHEARWATER

GREAT SHEARWATER

THE MEDITERRANEAN GREAT SHEARWATER

Puffinus kuhli (Boie)

The Mediterranean Great Shearwater is a larger bird than the species last described, lighter in the colour of the upper parts, and having the dark part of the head less distinctly separated from the white of the chin and throat than in the other. The bill is yellowish, the legs and feet flesh-colour, with parts of the legs, toes, and webs blackish. As its name implies, it inhabits the Mediterranean and nests underground in holes or in rocky crevices, laying a single white egg.

Only one example has been recorded in England, a dead bird having been picked up on Pevensey Beach, Sussex, in February, 1906.

Length, 20 inches; wing, $14\frac{1}{4}$ inches.

Another form or sub-species, the North Atlantic Great Shearwater, *Puffinus kuhlie borealis*, slightly larger than the Mediterranean bird and with a stouter bill, has once been obtained washed up on the Sussex coast at St. Leonards, Sussex, in March, 1914. It inhabits the North Atlantic, breeding in the Azores, the Madeiran Islands, Salvages, and the Canaries.

It nests in colonies, depositing its one white egg in recesses in cliffs or in crevices under boulders.

THE SOOTY SHEARWATER

Puffinus griseus (J. F. Gmelin)

PLATE 190

This species, occasionally seen off our shores in autumn, chiefly on the eastern coasts of Great Britain and Ireland, inhabits New Zealand and its adjacent islands in the breeding season. It nests in rather deep burrows, lays a single white egg, and in habits does not appear to differ from its near allies.

After nesting, it roams as far as North America, the Færoes, and shores of Europe.

Length, 18 inches ; wing, 12 inches.

THE LITTLE DUSKY SHEARWATER

Puffinus assimilis, Gould

This small Shearwater has occurred about eight times in British waters. It breeds on the Madeiras, Canaries, Cape Verde, and other islands in the North Atlantic, where it nests in holes and cavities between or under rocks and lays a single white egg. It is nocturnal in habits and constantly flits around its breeding stations during the darkness, uttering weird cries.

In colour the bird is much like the Manx Shearwater, the crown of head, nape, and upper parts of the body being black or brownish-black; the cheeks, throat, and under parts white.

The bill is black along the ridge and tip, bluish-grey below; the legs and feet bluish slate-colour.

Length 11 inches; wing, $7\frac{1}{2}$ inches.

A very closely-related form, *Puffinus obscurus*, inhabiting the Cape Verde Islands, has occurred twice in Sussex, the first at Pevensy, in December, 1914, and the other at St. Leonards, January, 1915. It differs from the Madeiran bird in colour slightly, having the under tail-coverts chiefly black instead of white.

A good deal of confusion exists about the correct scientific names of the two birds.

THE MANX SHEARWATER

Puffinus anglorum (Temminck)

PLATE 191

This is a common species in British waters, breeding on various islands off the western coasts of Great Britain and Ireland, as well as in the Orkneys, Shetlands, and Isles of Scilly, and chiefly inhabits the North Sea and the North Atlantic Ocean.

Through the kindness of the late Mr. Dorrien-Smith, I was able to visit a notable breeding station of this Shearwater on the island of Annet, in the Scilly group, where the turf and sandy soil on the upper and flatter part of the ground were riddled and honeycombed with their burrows, so much so that it was difficult to walk without treading on and breaking into these underground dwellings. If caught in these places the birds seemed to be dazed and quite dazzled with the light, and fluttered along the ground unable to fly, though in the daytime when at sea they are active and wide awake. On leaving the island we encountered a large flock resting on the water, which presented a charming picture, as each bird rose, and, rippling the surface with its feet, skimmed for some distance just above the sea. When fairly on the wing they fly with great speed, and follow each other as they sweep onwards in undulating curves.

The Manx Shearwater lays one white egg in a slight nest of withered grass within a burrow, and in the breeding season the birds are very noisy and restless during the night, when they never seem to rest.

The food is chiefly fish, cuttle-fish, and other animal matter.

The Levantine Shearwater, *Puffinus yelkouanus*, which



BULWER'S PETREL

MANX SHEARWATER

represents the Manx Shearwater in the Mediterranean, where it is known to the inhabitants as *Âme damnée*, often occurs off the coasts of the British Islands in autumn and winter. It scarcely differs from our bird, being only somewhat larger and browner in colour.

Length of Manx Shearwater, 15 inches; wing, $9\frac{1}{2}$ inches.

THE CAPPED PETREL

Æstrelata hæsitata (Kuhl)

An example of this very rare, if not extinct species was captured alive near Swaffham, Norfolk, in March or April, 1850. The latest recorded specimen was one obtained in the United States of America in 1898.

Formerly it inhabited the Lesser Antilles in some numbers, its last known breeding place being the island of Dominica, where the bird nested in holes in the ground at some considerable elevation. The egg is apparently unknown.

In colour, the bird has the cap and a space behind the eye dark brown, the upper parts of the body and wings also dusky brown, the central tail feathers and pinion feathers darker still. The forehead, throat, under parts and upper tail-coverts are white, the bill black, the legs and part of the toes and webs pinkish flesh-colour, the rest black.

Length, 16 inches ; wing, about $11\frac{1}{4}$ inches.

THE COLLARED PETREL

Œstrelata brevipes (Peale)

About the end of November or beginning of December, 1889, a specimen of this Petrel, the only one recorded in the British Islands, was obtained between Borth and Aberystwith in Wales. It breeds in the New Hebrides and Figi Islands in the Western Pacific Ocean, and appears to occur southwards as far as the limits of the Antarctic ice.

The Collared Petrel was found nesting in burrows high up on the mountains on an island of the New Hebrides by John MacGillivray, but no eggs were obtained.

In colour, the adult bird has the crown of the head, ear-coverts and upper parts of the body dark grey, lighter on the rump, and shaded with brown on the scapulars and wings; the throat and forehead are white, with some dark mottlings on the latter; the under parts also white, with a grey band across the breast. The bill is black, the legs, toes, and webs partly flesh-colour and partly black.

Length, $11\frac{1}{2}$ inches; wing, about $8\frac{3}{4}$ inches.

THE KERMADEC OR SCHLEGEL'S PETREL

Pterodroma neglecta (Schlegel)

An example of this Petrel was discovered lying dead under a tree after stormy weather near Taporley, Cheshire, in April, 1908. It inhabits the South Pacific Ocean and breeds on the Kermadec Islands.

According to Du Cane Godman (*Monograph of the Petrels*), "this Fulmar is remarkable for its variable colour, some examples being for the most part white, while others are entirely grey. These two phases of colour are so much unlike each other that the birds might very well be taken for different species." It is said to breed under the cover of vegetation, and not underground, and lays a single egg.

Length, 15 inches ; wing, about 11 inches.

BULWER'S PETREL

Bulweria bulweri (Jardine and Selby)

PLATE 191

Bulwer's Petrel has occurred about half a dozen times in England, most of these birds being dead when found, the first in Yorkshire in May, 1837, four in Sussex between 1903 and 1911, and the last shot in Kent in March, 1916.

This species breeds on the Desertas, Madeira, and also inhabits islands in the Northern Pacific Ocean. According to Du Cane Godman's *Monograph of the Petrels*, "The nest is usually concealed under boulders or in holes in the rocks, where a few old bones or feathers of a Tern frequently supply the place of sticks or grass for the nest. Here the single white egg is laid, though Mr. Fisher relates that on one occasion on Neckar Island two eggs were found in the same hole, possibly belonging to different birds."

"These birds are purely nocturnal in habits, and although very rarely found in flocks like Shearwaters, remain almost constantly at sea, except during the breeding season."

Length, 11 inches ; wing, 8 inches.

THE FULMAR

Fulmarus glacialis (Linnæus)

PLATE 192

Inhabiting the North Atlantic Ocean, the Fulmar, which up till 1878 bred only on St. Kilda, has gradually extended its breeding stations southwards in the British Islands, and now nests on many of the islands of Northern and North-western Scotland as well as on the mainland as far south as St. Abb's Head, Berwickshire. It first appeared on the Yorkshire coast at Bempton in 1919 and now breeds regularly on this part of the English shores, and I hear that the birds are there now in this present summer of 1926. It also nests in Ireland.

The Fulmar breeds in colonies, the female laying one pure white egg, with a chalky surface and having a curious musky odour, on some ledge of rock or in a depression among the short turf on the slopes of a steep cliff. On the island of Handa, Sutherland, I once saw a bird brooding on a pair of eggs, but this is exceptional. On being handled or disturbed when sitting, it can eject from its mouth a clear yellowish coloured oil, with a pungent smell, which is used as a means of defence. The flight of the birds is striking and characteristic as they sweep to and fro along the precipitous faces of the cliff, with straight outstretched pinions, showing no bend at the carpal joint of the wing like the gulls. They are usually silent birds, but when nesting utter a low crooning note. After the breeding season they disperse, and are then only to be found roaming far and wide at sea, often approaching fishing boats, and in the old days the whaling ships, when they feed chiefly on oily matter or offal floating on the surface of the water.



FULMAR

Variations of colour occur in this species ; occasionally pure white birds are seen, and in the more northern part of its range an entirely slaty-grey form is not uncommon. Like most, if not all Petrels, the Fulmar appears to be unable or unwilling to stand on its feet, and rests when on the ground in a crouching attitude. The bird shown in the plate was sketched from life on the Island of Handa.

Length, 19 inches ; wing, $13\frac{1}{4}$ inches.

FAMILY DIOMEDEIDÆ

THE BLACK-BROWED ALBATROSS

Diomedea melanophrys, Boie

A specimen of this fine bird, driven inland and exhausted, was obtained near Linton, Cambridgeshire, in July, 1897. It breeds on the Chatham, Campbell, and other islands in the Southern Hemisphere and in its wanderings occasionally appears in the North Atlantic, one having been shot in the Færoes in 1893, where for thirty or forty years it is said to have consorted with the Gannets.

The female usually lays one yellowish-white egg, speckled with reddish-brown.

The head, neck, and upper part of mantle are white, occasionally toned with grey, with a dark streak before and behind the eye. The under parts are white, the upper blackish-grey, the tail grey.

The bill and legs are yellowish, the irides dark brown.

Length, about 29 inches ; wing, 19 inches.

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